

Great Basin Unified
Air Pollution Control District

DRAFT

2010
Ambient Air Monitoring Network Plan

April 16, 2010

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1.0 Introduction

An annual review of all national air quality monitoring networks is required by Federal regulations as a means to identify needs for addition, relocation, or termination of monitoring stations or instrumentation. The annual Air Quality Monitoring Network Plan prepared by the California Air Resources Board (CARB) in the past has included the area within the Great Basin Unified Air Pollution Control District (District). However, over the past year the District has begun the process of becoming a primary quality assurance organization separate from the CARB and is, therefore, required to prepare its own plan and submit it to the U.S. Environmental Protection Agency (EPA). This report describes the network of ambient air quality monitors to be operated by the District during the 2010 calendar year. It includes a review of actions taken in the monitoring network during the 2009-2010 fiscal year and plans for actions in the years ahead. This draft plan addresses the requirements for an annual network plan as listed in the Code of Federal Regulations, Title 40, Part 58, Section 10 (40 CFR 58.10). These regulations require that the report be submitted to the EPA by July 1 of each year after a 30-day public comment period.

The District staff, along with the CARB and EPA Region IX conducted a review of the air monitoring stations throughout the District in 2007. State and Local Air Monitoring Station (SLAMS) designations, monitoring objectives, and spatial scales of representativeness were assigned to the criteria pollutants monitored by site. Each year, District staff conducts an annual review of the air monitoring network to evaluate whether the current monitoring strategies are meeting the needs of the District, to determine compliance with all current Federal and State regulations, and to aid in the development of future monitoring strategies. When monitoring station additions or relocations are warranted, site reports are written and/or updated in the EPA's Air Quality System (AQS) database to document compliance with established monitoring criteria.

2.0 Public Comments

Pursuant to Federal regulations, this draft plan is to be made available for public inspection and comment for at least 30 days prior to submission to the EPA. Notice of availability of the document was published in local newspapers and the document was posted to the District's website (www.gbupcd.org) on April 16, 2010, under the link, "Current Events." The draft document was also made available to the EPA during the review period. The public review period provides an opportunity for the public, the EPA, and any other interested parties to provide comments on the plan. Comments received will be included in the plan. Following the review period ending May 17, 2010, the plan will be submitted to EPA for approval of any SLAMS network changes.

3.0 Network Design

The District operates eighteen (18) air quality monitoring stations in four planning areas and in the general environs of the District's three counties: Alpine, Inyo, and Mono. The planning areas in the District are: Searles Valley, Southern Owens Valley, Mono Basin, and Mammoth Lakes. Figures 1 - 3 present maps of the entire District indicating the planning areas, all of which are PM₁₀ nonattainment areas, the monitoring stations currently in operation, and those stations

planned for installation this year. Table 1 provides a list of the monitoring stations, the pollutants measured at each station, the EPA Air Quality System (AQS, the EPA's national air quality data base) site codes, and the start date for the station.

Table 2 presents the monitoring objective and spatial scale for each monitor at each site. Table 3 presents the monitoring purpose for each monitor at each site, providing the reason for measuring a specific pollutant at a given site. A list of the monitoring purposes and a description of them is provided in this document. Portions of these monitoring purposes and their descriptions are adapted from the CARB annual network plan for 2009.

After consultation with the District Board and District monitoring specialists, the APCO determines monitoring locations in the District, as delegated by the CARB. Monitoring locations are then added to or removed from the network monitoring plan that is assembled and presented annually to the public for comment. This plan is then submitted to EPA for review. The EPA Region IX administrator has the final authority on the configuration of the monitoring network.

Figure 1. Great Basin Unified Air Pollution Control District Map

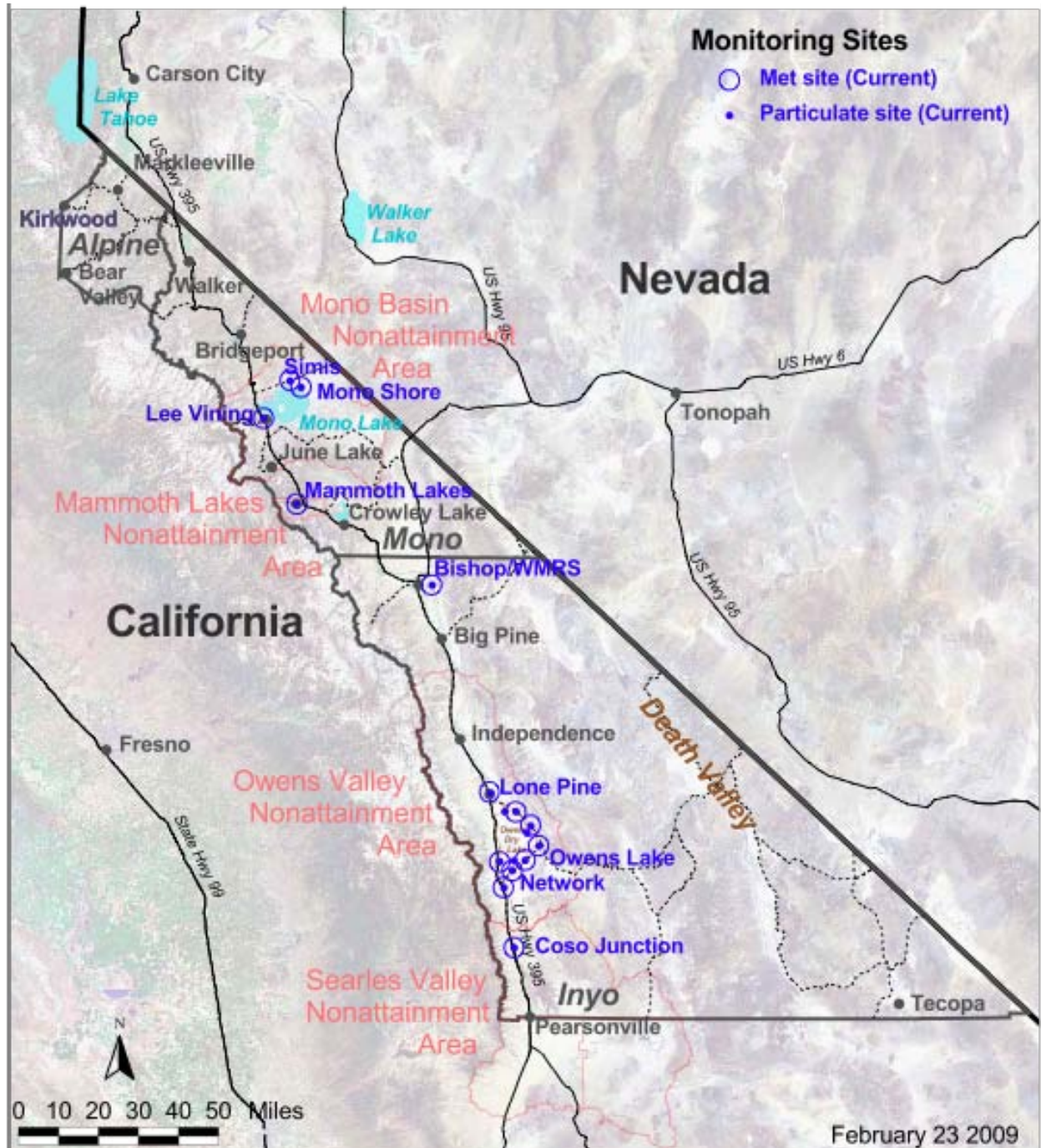


Figure 2. Great Basin Unified Air Pollution Control District Map, Owens Lake detail

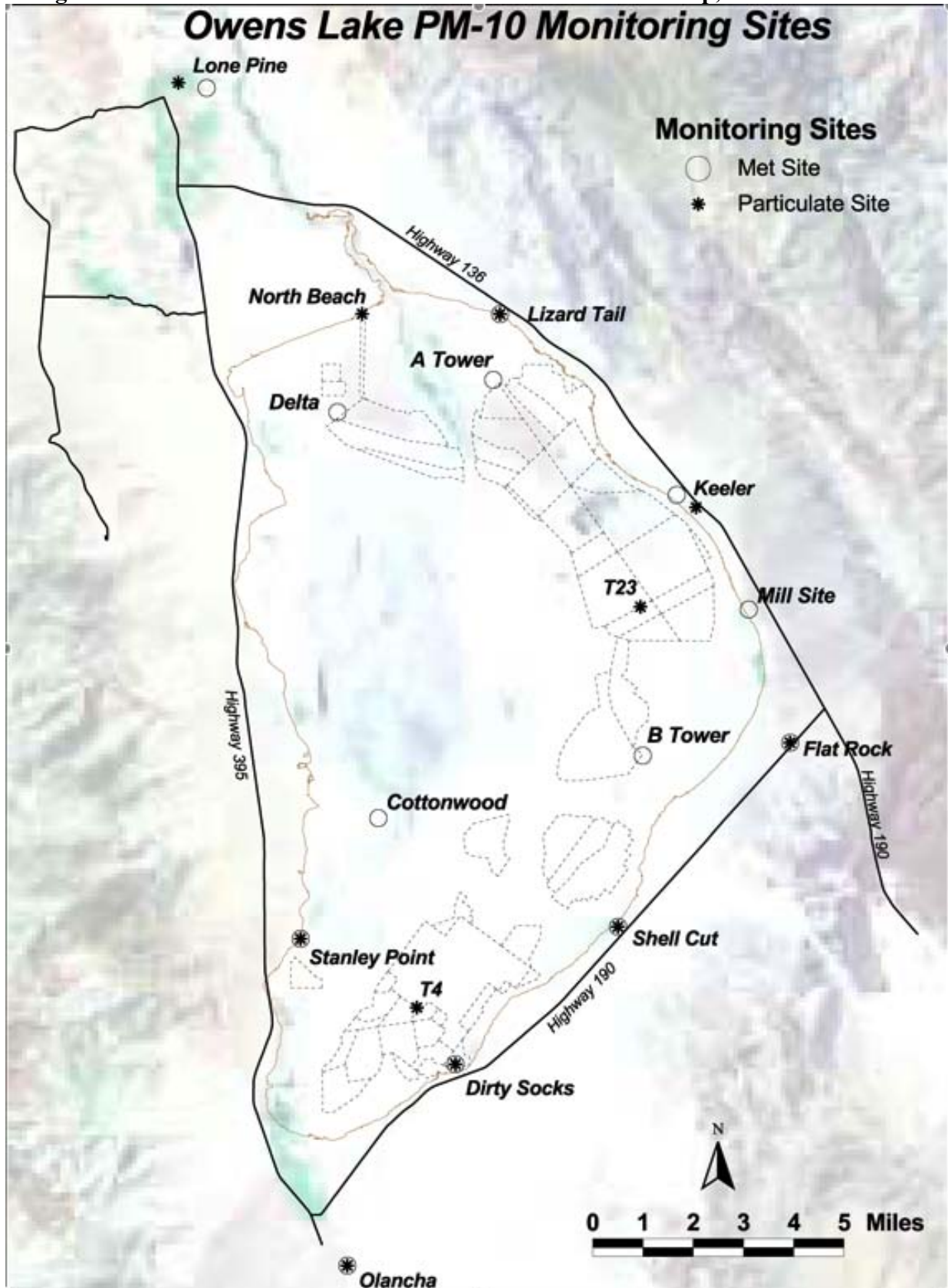


Figure 3. Great Basin Unified Air Pollution Control District Map, Mono Lake detail

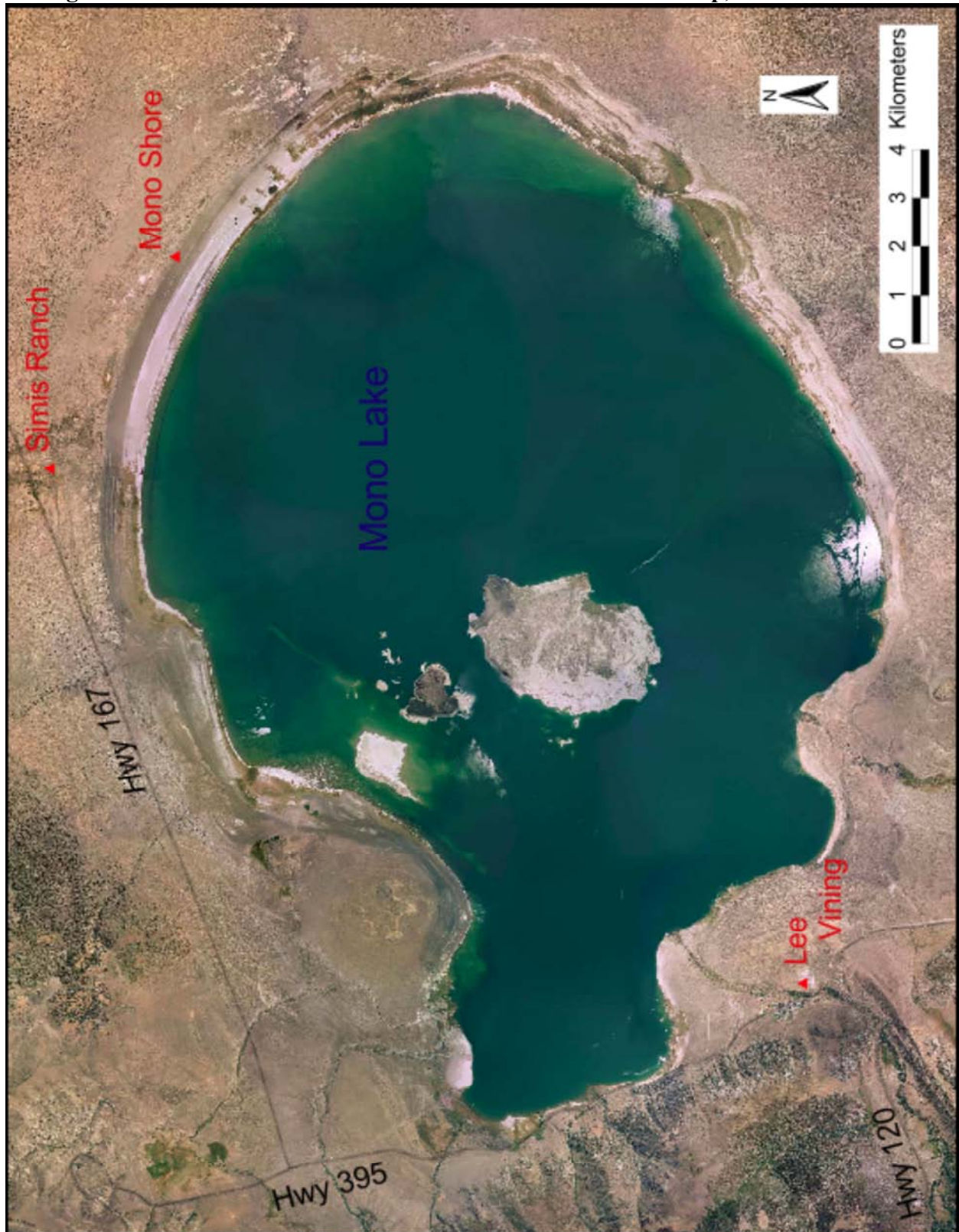


Table 1. List of Monitoring Sites and Variables Monitored

Site Name	Network	AQS Number	Pollutants Monitored	Start Date
Dirty Socks	Owens Lake	06-027-0022	PM10	Jun-99
Shell Cut	Owens Lake	06-027-0025	PM10	Jan-01
Flat Rock	Owens Lake	06-027-0024	PM10	Jan-01
Bill Stanley	Owens Lake	06-027-0026	PM10	Mar-02
Olancho	Owens Lake	06-027-0021	PM10	Aug-95
Lone Pine	Owens Lake	06-027-0004	PM10	Jan-80
North Beach	Owens Lake	06-027-0029	PM10	Nov-08
Lizard Tail	Owens Lake	06-027-0028	PM10	Feb-08
Keeler	Owens Lake	06-027-1003	PM10, PM2.5	Jul-94
T-8	Owens Lake	N/A	PM10	Apr-08
T-25	Owens Lake	N/A	PM10	Apr-08
Coso Junction	Owens Lake	06-027-1001	PM10	Mar-79
Mammoth Lakes	Mammoth Lakes	06-051-0001	PM10	Apr-84
Lee Vining	Mono Basin	06-051-0005	PM10	Jan-81
Simis Residence	Mono Basin	06-027-0007	*	
Mono Shore	Mono Basin	06-027-0011	PM10	Jan-00
White Mountain**	District	06-027-0002	PM10	4/1/2006***
NCORE	District	TBD	CO, SO ₂ , NO _y	TBD

* PM10 monitoring ended August 2008. Station is currently used for meteorological monitoring only.

** District's Portable Monitoring Station berth.

*** Portable Monitoring Station returned to berth June 2008, after a one-year monitoring project in Tecopa, California.

Table 2. Criteria Pollutant Monitoring Objective and Spatial Scales

MONITORING OBJECTIVE

SPATIAL SCALE

HC - High Concentration

MI - Microscale

RC - Representative Concentration

MS - Middle Scale

IM - Impact

NS - Neighborhood Scale

BL - Background Level

US - Urban Scale

Site Name	Network	PM10	PM2.5
Dirty Socks	Owens Lake	RC/NS	RC/NS
Shell Cut	Owens Lake	RC/NS	
Flat Rock	Owens Lake	RC/NS	
Bill Stanley	Owens Lake	RC/NS	
Olancho	Owens Lake	RC/NS	
Lone Pine	Owens Lake	RC/NS	
North Beach	Owens Lake	RC/NS	
Lizard Tail	Owens Lake	RC/NS	
Keeler	Owens Lake	RC/NS	
T-8	Owens Lake	HC/NS	
T-25	Owens Lake	HC/NS	
Coso Junction	Owens Lake	RC/NS	
Mammoth Lakes	Mammoth Lakes	RC/NS	
Lee Vining	Mono Basin	RC/NS	
Simis Residence	Mono Basin	*	
Mono Shore	Mono Basin	HC/NS	
White Mountain	District	RC/NS	
NCORE	District	RC/RS	

* PM10 monitoring ended August 2008. Station is currently used for meteorological monitoring only.

Table 3. Criteria Pollutant Monitoring Purposes

MONITORING PURPOSE

BK - Background Level

RC - Representative Concentration

HC - High Concentration

SO - Source Impact

TP - Pollutant Transport

TR - Trend Analysis

EX - Population Exposure

CP - Site Comparison

SPM - Special Purpose Monitor

Site Name	Network	PM10	PM2.5
Dirty Socks	Owens Lake	RC/SO	RC/EX
Shell Cut	Owens Lake	RC/SO	
Flat Rock	Owens Lake	RC/SO	
Bill Stanley	Owens Lake	RC/SO	
Olancho	Owens Lake	RC/EX	
Lone Pine	Owens Lake	RC/EX	
North Beach	Owens Lake	RC/SO	
Lizard Tail	Owens Lake	RC/SO	
Keeler	Owens Lake	RC/EX	
T-8	Owens Lake	HC/SPM	
T-25	Owens Lake	HC/SPM	
Coso Junction	Owens Lake	RC/TP	
Mammoth Lakes	Mammoth Lakes	RC/EX	
Lee Vining	Mono Basin	RC/EX	
Simis Residence	Mono Basin	*	
Mono Shore	Mono Basin	HC/SO	
White Mountain	District	RC/EX	
NCORE	District	RC/BK	

* PM10 monitoring ended August 2008. Station is currently used for meteorological monitoring only.

Definitions

Background Level monitoring is used to determine general background levels of air pollutants.

Core-based Statistical Area (CBSA) is defined by the U.S. Office of Management and Budget as a statistical geographic entity consisting of the county or counties associated with at least one urbanized area/urban cluster of at least 10,000 population, plus adjacent counties having a high degree of social and economic integration. The two categories of CBSAs are metropolitan statistical areas and micropolitan statistical areas.

High Concentration monitoring is conducted at sites to find the highest concentration of an air pollutant in an area within a given monitoring network. A monitoring network may have multiple high concentration sites as a result of varying meteorology, source area variability, etc.

Metropolitan Statistical Area (MSA) is defined by the EPA and by the U.S. Office of Management and Budget as areas having at least one urbanized area of 50,000 or more population, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties.

Micropolitan Statistical Area (MiSA) is defined by the U.S. Census Bureau and the U. S. Office of Management and Budget as an area having one urbanized area or urban cluster of between 10,000 and 50,000 population.

Monitoring Objectives are the measures for determining the level of pollutant impacts from particular sources at particular sites, i.e., to determine the high concentrations (HC) affecting specific places from sources, the representative concentrations (RC) or overall affect of sources in a given area, the impact (IM) caused by maximum concentration affecting specific places, and background level (BL) concentrations measured upwind of a specific sources.

Monitoring Planning Area (MPA) is defined by the EPA as a contiguous geographic area with established, well-defined boundaries, such as a metropolitan statistical area, county, or State, having a common area that is used for planning monitoring locations for PM_{2.5}. MPAs may cross political boundaries, e.g., State, County, etc. MPAs are generally oriented toward areas with populations greater than 200,000.

Monitoring Purpose is the reason for conducting monitoring at a particular location. There is some crossover with monitoring objectives, however, they relate specifically to the pollutant, whereas monitoring purposes relate to the effects of the pollutants on populations or resources. Monitoring purposes include: background level (BK), high concentration (HC), representative concentration (RC), and source impact (SO), all of which are defined similarly to the named objectives above. Additional monitoring purposes include: pollutant transport (TP) where pollution from one region or district is carried to another by the winds; population exposure (EX) where a site is located specifically for determining the pollutant exposure level of a particular population;

special purpose monitor (SPM) is one that is set in place for a short-term study; trend analysis (TR) indicates those sites at which data have been collected over a time period sufficient to determine particular trends, e.g. seasonal variations, etc.; site comparison (CP) indicates sites used to compare variability of pollutant impacts between the sites.

Nonattainment Area is any area that does not attain the standard for at least one of the pollutants for which there are National Ambient Air Quality Standards (NAAQS).

Pollutant Transport is the movement of pollutant(s) between air basins or areas within an air basin. Pollutant transport monitoring is used to assess and address sources from upwind areas when those transported pollutant(s) affect neighboring downwind areas. Transport monitoring can also be used to determine the extent of regional pollutant transport.

Population Exposure monitoring is conducted to represent the air pollutant concentrations to which a populated area is exposed.

Representative Concentration monitoring is conducted to determine pollutant concentrations over a homogeneous geographical area. These sites do not necessarily indicate the highest concentrations in an area for a particular pollutant.

Source Impact monitoring is used to determine the impact of particular and significant sources of pollutant emissions on the air quality. Air pollutant sources may be stationary or mobile.

Spatial Scales define the concentrations within a given area that has relatively uniform land use and reasonably homogeneous geography. These scales are defined as follows:

Microscale - defines an area with dimensions ranging from several meters up to about 100 meters (several yards up to 100 yards).

Middle Scale - defines an area of up to several city blocks in size, with dimensions ranging from about 100 meters to 0.5 kilometers (100 yards to 1/3 mile)

Neighborhood Scale - defines an area with dimensions in the 0.5 to 4.0 kilometer range (1/3 mile to 2.5 miles). Most of the District's sites have been determined to be neighborhood scale sites.

Urban Scale - defines an area with dimensions on the order of 4 to 50 kilometers (2.5 miles to 30 miles).

Regional Scale - usually defines rural areas and extends from tens to hundreds of kilometers (or miles).

National and Global Scale - these measurement scales represent pollutant concentrations characterizing the nation and the globe as a whole.

Trend Analysis monitoring is useful for comparing and analyzing air pollution concentrations over time. Trend analysis can show the progress or lack thereof in improving the air quality for a given area over a period of many years.

Site Comparison monitoring is used to assess the effect of moving a monitoring location a short distance (approximately 2 miles or less) on measured pollutant levels. Some monitoring stations become unusable due to development, change of lease terms, eviction, etc. In these cases, attempts are made to conduct concurrent monitoring at both the old and new monitoring locations for a period of time in order to compare pollutant concentrations at both.

Multiple purposes for monitoring a pollutant at a particular site are possible. There is some overlap between monitoring objectives as defined by EPA, presented in Table 2, and the monitoring purposes presented in Table 3.

A brief description of the network for each criteria pollutant monitored is provided here. Further site-specific information is presented in Appendix A.

PM₁₀

Medium-volume size selective inlet filter-based PM₁₀ monitors (Rupprecht & Patashnick Partisol Plus 2025) are operated at three (3) sites. Monitoring at the sites is conducted on either the Federal one-in-three-day schedule or on a daily schedule. Filter-based monitors typically measure integrated 24-hour-average PM₁₀ concentrations.

Continuous PM₁₀ monitors (Rupprecht & Patashnick TEOM 1400a AB and/or Thermo TEOM 1405DF monitors) are operated in conjunction with filter-based monitors at two of the three filter-based sites. Continuous PM₁₀ monitors alone are operated at an additional 13 sites. The advantage of continuous PM₁₀ monitors is that they are capable of measuring hourly pollutant concentrations. These continuous PM₁₀ monitors are concentrated in areas of high PM₁₀ impact: e.g. around the shoreline of Owens Lake, in the Town of Mammoth Lakes, at the site of maximum impact on the north shore of Mono Lake. Hourly resolution of PM₁₀ concentrations enables the District to more accurately determine the source of the emissions, especially in short-term wind-event driven emissive areas like Owens and Mono Lakes.

PM_{2.5}

The District operates one collocated PM_{2.5} monitoring station at the Keeler monitoring site. The monitors are medium volume filter-based Federal Equivalent Method samplers (Rupprecht & Patashnick Partisol Plus 2025 with a very sharp-cut cyclone (VSCC) for PM_{2.5}). The primary monitor operates on the Federal 1-in-3-day schedule and the collocated monitor operates on the Federal 1-in-12-day schedule.

Meteorology

The District operates meteorological sensors at nearly all permanent monitoring stations. Meteorological variables measured include wind speed, wind direction and ambient temperature. In addition, at some locations relative humidity, barometric pressure and precipitation are also measured.

Network Description

Owens Lake

The Owens Lake monitoring network consists of a combination of ten (10) ambient air monitoring stations: seven (7) stations ring the lake along the historic shoreline, one of which is a population-based station, located at Keeler; two other population-oriented sites are located in the communities of Lone Pine north of the lake and Olancha, south of the lake. An additional monitor is located 20 miles south of the lake at Coso Junction. This station is used for modeling of Owens Lake plume trajectories but is located in the Coso Junction Planning Area. Each station utilizes an R&P TEOM monitor for PM₁₀ measurements. All of the ten ambient air monitoring stations are designated as SLAMS sites.

Dust Identification Program

In addition to the ten SLAMS stations around the Owens Lake, the District operates two air quality stations: one at the locations designated T4 on the south end of the lake, and another, designated T23 toward the east central area of the lake; and four meteorological stations. These are special purpose monitors used to determine dust source areas requiring mitigation and are part of the District's Dust Identification Program. In addition, the program consists of a series of approximately 200 sand motion sensors (Sensits) and accompanying sand collection devices (Cox Sand Catchers (CSCs)). The network also utilizes dust observations made by District personnel during wind events and ten camera stations with a total of 14 cameras collecting images of the lakebed every five minutes during daylight hours. This system coupled with the model and the SLAMS stations described above enables the District to pinpoint emissive areas of the lakebed that cause or contribute to exceedances of the Federal PM₁₀ standard and target those areas for mitigation. A map detailing the locations of the monitoring sites used for the Dust ID program is presented in Figure 4.

Mammoth Lakes

The Mammoth Lakes monitoring network consists of one monitoring station located in the Town of Mammoth Lakes. This station utilizes an R&P TEOM for hourly-resolved PM₁₀ concentrations and an R&P Model 2025 Partisol Plus Sequential Sampler, a Federal Reference Method monitor, operating on the one-in-three-day schedule for 24-hour integrated PM₁₀ concentration data. The District has successfully operated an R&P TEOM 1400a AB with a filter dynamics measurement system (FDMS) for PM₁₀ in the Mammoth Lakes monitoring station since October 2008. This station is used by the District to determine compliance with the Federal PM₁₀ standard for this previously nonattainment community. The hourly resolved data allow Town personnel to forecast and determine "no-burn" days for wood stove operators in order to maintain compliance with the Federal PM₁₀ standard.

NCORE

The District has also been asked by EPA to install and operate a rural NCORE station. This station will be installed at the District's White Mountain Research Station monitoring site. The station is scheduled to be online by January 1, 2011. Further details on the station are contained in Appendix B, which contains a standalone monitoring plan for the District's NCORE station.

Figure 4. Owens Lake Map: Dust Identification Program Detail

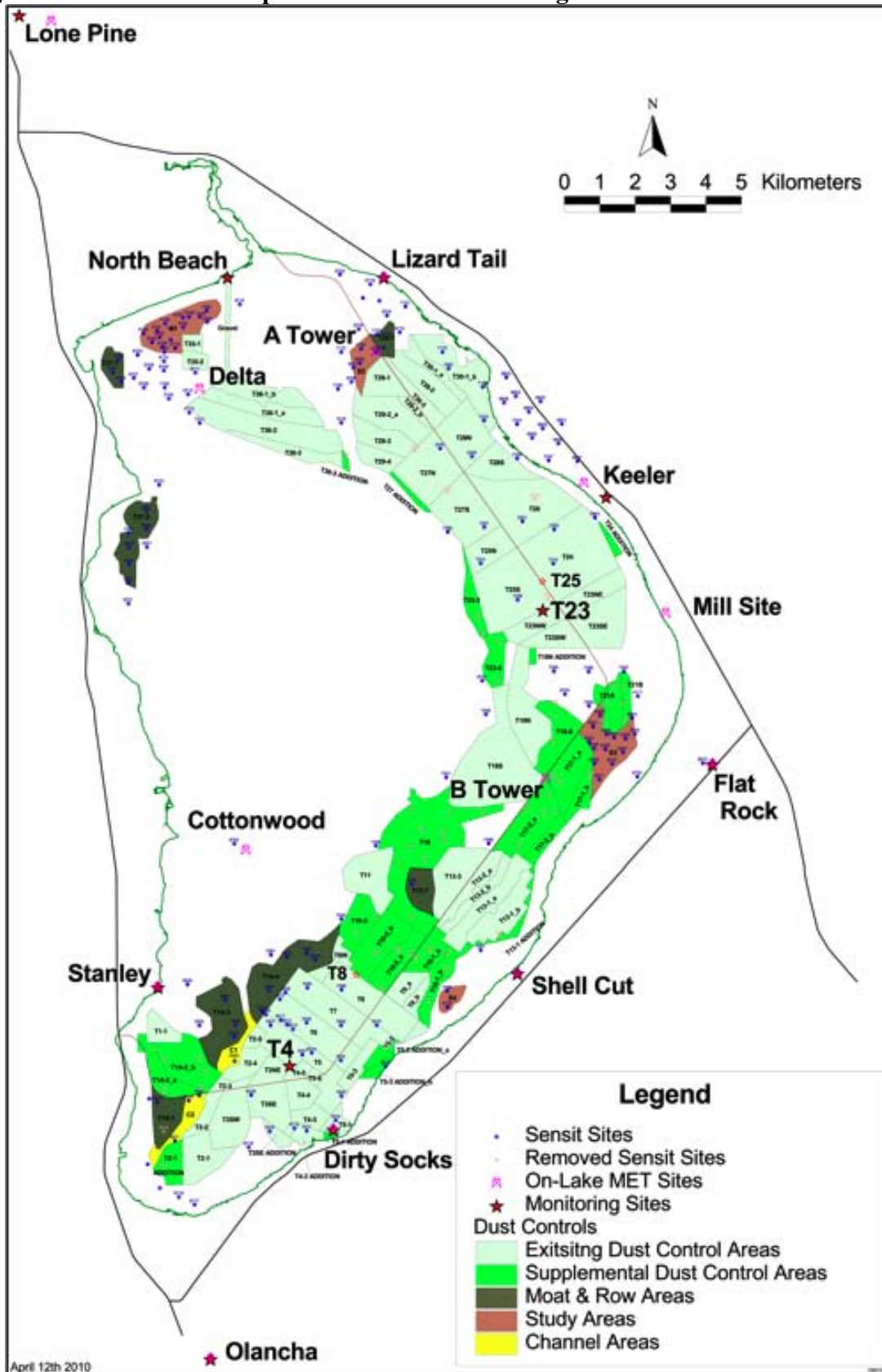
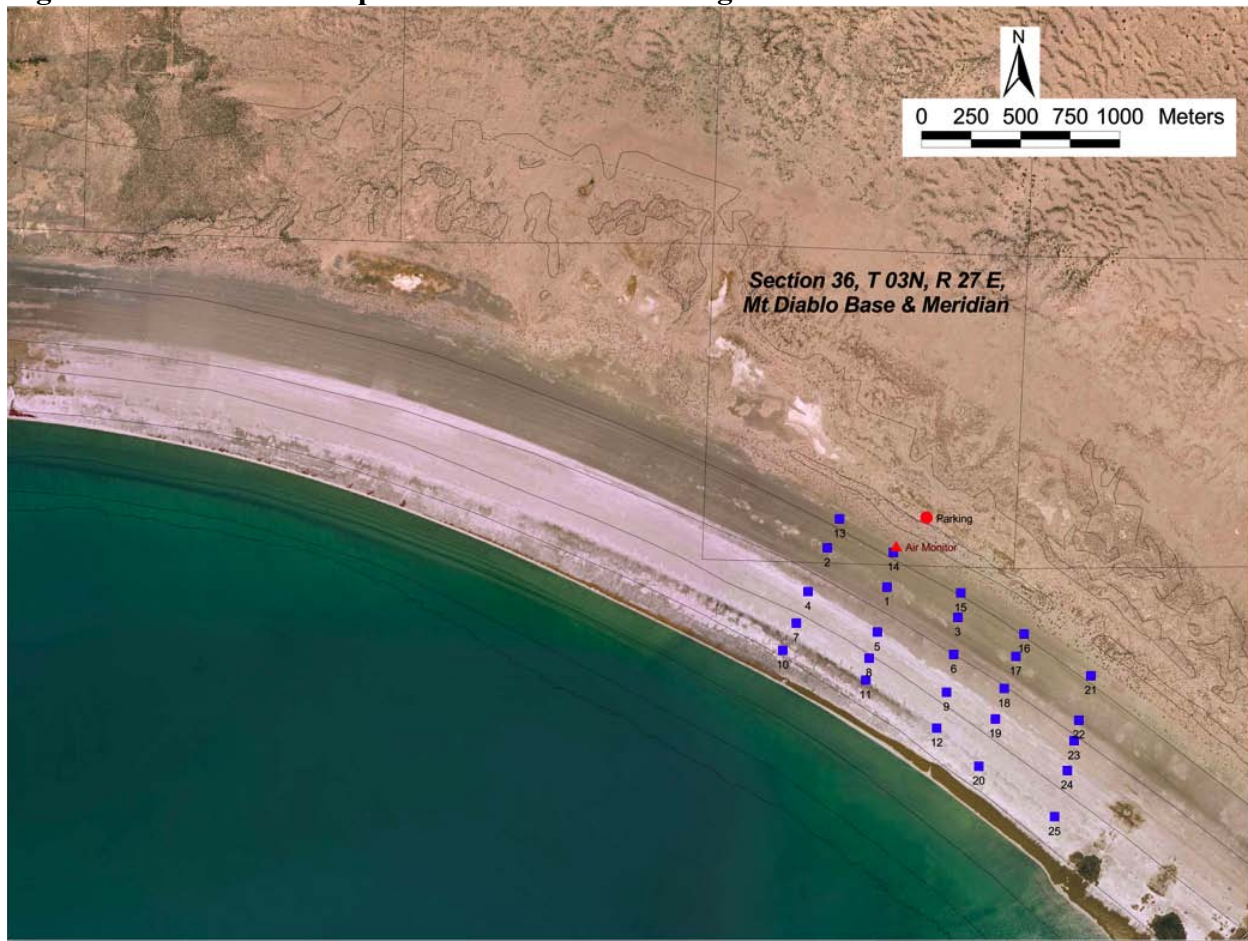


Figure 5. Mono Lake Map: Dust Identification Program Detail

Mono Lake

The District has operated monitoring stations in the Mono Basin area for approximately 19 years. The Mono Lake monitoring network currently consists of three monitoring stations: Lee Vining, Simis Ranch, and Mono Shore. Through August of 2008, PM₁₀ concentrations were collected using filter-based BGI PQ200 monitors, collecting 24-hour integrated samples, located at Simis Ranch and Mono Shore, two lakeshore perimeter sites. PM₁₀ concentrations at Lee Vining, a population-based site, were and are collected using a filter-based R&P 2025 Partisol Plus Sequential Sampler operating on the one-in-three-day schedule. The BGI monitors at Simis Ranch were removed and not replaced due to the fact that no exceedances had been measured there since August 31, 1996, and a point-of-maximum-impact site, Mono Shore, being outfitted with a PM₁₀ monitor in 1999.

The BGI monitors at Mono Shore were replaced in 2008 with an off-the-grid solar-powered R&P TEOM monitor. The TEOM provides hourly-resolved PM₁₀ concentrations and has provided the District with the opportunity to develop a Dust ID program at Mono Lake. This Dust ID network consists of twelve (12) Sensits and 25 CSCs. This network is used to provide information on what portion(s) of the exposed shoreline are emissive and to what extent during a given dust storm. The Mono Lake Dust ID network is presented in Figure 5.

The North Shore site is off the power grid and consists of a large solar power array and battery system. In order to minimize power consumption, the TEOM is housed in a custom-designed Zomeworks Cool Cell. The Cool Cell regulates the temperature of the Cell housing the TEOM passively using a water radiator and reservoir system to regulate the Cell temperature. The continuous monitor and the seasonally (non-winter) operating filter-based medium volume PM₁₀ monitors (BGI PQ200) were operated side-by-side from May through August 2008 in order to provide comparison data between the two different monitoring methods. After that comparison period, the filter-based monitors were shut down and removed from service, leaving the continuous PM₁₀ monitor as the primary monitor for that station.

4.0 Special Programs

The District periodically conducts special monitoring programs for rule compliance and pollutant level assessment. The data gathered are for informational purposes initially and may lead to designation of special purpose monitors, as defined under Title 40 CFR 58.20, or to permanent monitoring locations in the District's network, or to nothing beyond the initial purpose of information gathering. During the 2010 monitoring year, the District will be conducting the special programs listed below.

On-Lake PM10 Monitor Intercomparison Study

The District conducted a study from February through June in the southern portion of Owens Lake, at the T-8 station, in order to compare several different types of PM10 monitors. These monitors included: one TEOM 1400ab, one BGI PQ200, three Met One eSamplers, and three TSI DustTraks. The purpose of the study was to determine the viability of utilizing smaller, more portable PM10 monitors for episodic monitoring of PM10 on and around the lakebed in order to more accurately and cost-effectively ascertain emissive area locations and their impacts. Staff determined that the portable monitors were not sufficiently accurate for District PM10 monitoring. A full report will be drafted after the data are analyzed.

Portable PM10 Monitoring

Staff determined there was a need for small portable TEOM monitors that could be transported to monitoring locations and set up for short-term episode PM10 monitoring. Staff constructed one portable TEOM station that utilizes a propane-fired generator for power. The station can operate for more than three days on two small tanks of propane. The station has been successfully operated during several episodes on Owens Lake from February through April 2010. Staff is in the process of constructing an additional portable TEOM monitor that will also be used for episode monitoring.

5.0 Recent or Proposed Modifications to Network

Owens Lake

The District completed installation the North Beach station, near the Owens River delta area on the north end of the lake in November 2008. Variables monitored at the North Beach station

include continuous PM₁₀ monitored with an R&P TEOM 1400ab. Meteorological variables, including wind speed, wind direction and ambient temperature, are measured at the Delta meteorological monitoring station approximately 2 miles south of the North Beach station. There are no obstructions between the North Beach station and the Delta meteorological monitoring station. The North Beach station is a permanent addition to the Owens Lake network, as agreed between the District and the City of Los Angeles Department of Water & Power.

Two on-lake PM₁₀ monitoring stations, designated T8 and T25, were removed from the network February/March 2010. Two new on-lake PM₁₀ monitoring stations, designated T4 and T23, were installed in the Owens Lake Network in March 2010. Each of these stations consists of one TEOM 1400ab continuous PM₁₀ monitor in a temperature-controlled shelter. The purpose of these monitors is to measure PM₁₀ emissions near the remaining source areas on the lakebed and to further refine the Districts Dust Identification Program model. The new special purpose monitors will be operated through February 2012.

Data from the Coso Junction PM₁₀ monitoring station have been invalidated for the first two quarters of 2010. Monitored violations that seemed suspicious to District staff warranted investigation. The results of the investigation were that: 1) the vegetation that had been in place for several years in the area immediately around the station had died off, exposing friable soils that could be easily lofted by the wind, and 2) since January 2010 a contractor had been onsite who had installed an equipment trailer near the monitoring station and had been driving along the site access road and beyond it into the undisturbed soils area several times each day in order to collect equipment from the trailer. The increased travel on the station access road from 1 – 2 vehicles per week to 10 to 20 per day damaged the graveled road and the previously crusted surface of the soil. The vegetation die-off occurred due to the office near the station being abandoned and the irrigation of the area stopped. A meeting with the operators of the station, Coso Operating Company, took place and a mitigation plan discussed. Coso Operating Company will document the plan and will begin the mitigation of the problem areas by July 1, 2010. The goal is to begin to collect valid data again beginning with the third quarter of 2010.

Mono Lake

Changes planned for the Mono Lake network for 2010 include the installation of a continuous TEOM PM₁₀ monitor in the community of Lee Vining. The District has operated a filter-based PM₁₀ monitor in Lee Vining, located on the southwest side of Mono Lake, for over 15 years. Plans to install a continuous TEOM PM₁₀ monitor at the Lee Vining station in 2008 were delayed. The District plans to complete the installation of the continuous TEOM PM₁₀ monitor and remove the filter-based PM₁₀ monitor from service during 2010.

National Core Multipollutant Monitoring Station (NCORE)

The District was chosen by EPA Region IX staff to install and operate one of the EPA NCORE monitoring stations. The NCORE network consists of 75 monitoring stations around the nation that will be used by EPA for determining national monitoring and regulatory strategies. Seven monitoring stations are to be placed in California and the District has been chosen to operate one of them: a rural NCORE site. These sites will be funded by EPA for capital equipment and operation and maintenance.

The first phase of funding began with the 2008 calendar year. Funds have been received for the procurement of the prescribed monitoring equipment which includes: a low-level carbon monoxide monitor (CO), a low-level sulfur dioxide monitor (SO₂), a low-level oxides of nitrogen monitor (NO_x), and a calibration system for the monitors. The EPA Region IX staff has also provided the District with a monitoring station enclosure on long-term loan to the District in which to house the NCORE monitoring equipment. The District has proposed the NCORE site be located at the White Mountain Research Station, east of Bishop, near the current berth of the District's Portable Monitoring Station. Final approval of the site by EPA headquarters will be given by mid-2009. Installation of the station and procurement and installation of the equipment are scheduled for mid-2009.

6.0 Minimum Monitoring Requirements

The District's jurisdictional boundaries encompass no Metropolitan Statistical Areas (MSA) as defined by the U.S. Office of Management and Budget and the U. S. Census Bureau (population greater than 50,000). The District does, however, contain Monitoring Planning Areas defined as "areas determined to be (potentially) in violation of the PM_{2.5} NAAQS." The District is also required to operate at least one monitor in each of the four (4) PM₁₀ nonattainment areas. The District exceeds the minimum monitoring requirements for criteria pollutants as detailed below.

PM₁₀

<u>Nonattainment Area Monitors</u>	<u>Min. No. Monitors Required</u>	<u>No. of Monitors Active</u>
Searles Valley	1	1
Owens Lake	1	11
Mammoth Lakes	1	2
Mono Basin	1	2

PM_{2.5}

<u>MPA</u>	<u>Min. No. Monitors Required</u>	<u>No. of Monitors Active</u>
Keeler	1	1+1 collo.

APPENDIX A

Site Information Summaries Site Reports

Great Basin Unified Air Pollution Control District
Site Specific Information

Site Name	Network	AQS Number	Pollutants Monitored	Start Date
Dirty Socks	Owens Lake	06-027-0022	PM10, Met.	Jun-99
Shell Cut	Owens Lake	06-027-0025	PM10, Met.	Jan-01
Flat Rock	Owens Lake	06-027-0024	PM10, Met.	Jan-01
Bill Stanley	Owens Lake	06-027-0026	PM10, Met.	Mar-02
Olancho	Owens Lake	06-027-0021	PM10, Met.	Aug-95
Lone Pine	Owens Lake	06-027-0004	PM10, Met.	Jan-80
North Beach	Owens Lake	06-027-0029	PM10, Met.	Nov-08
Lizard Tail	Owens Lake	06-027-0028	PM10, Met.	Feb-08
Keeler	Owens Lake	06-027-1003	PM10, PM2.5, Met.	Jul-94
T-8	Owens Lake	NA	PM10	Apr-08
T-25	Owens Lake	NA	PM10	Apr-08
Coso Junction	Owens Lake	06-027-1001	PM10, Met.	Mar-79
Mammoth Lakes	Mammoth Lakes	06-051-0001	PM10, Met.	Apr-84
Lee Vining	Mono Basin	06-051-0005	PM10, Met.	Jan-81
Simis Residence*	Mono Basin	06-027-0007	Met.	Nov-81
Mono Shore	Mono Basin	06-027-0011	PM10, Met.	Jan-00
White Mountain**	District	06-027-0002	PM10, Met.	Apr-06
NCORE	District	TBD	CO, SO2, NOy	TBD

* PM10 monitoring discontinued August 2008.

** District's Portable Monitoring Station berth. Located in Tecopa through June 2008.

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Great Basin Unified Air Pollution Control District Site Specific Information

Site Name	Monitoring	Pollutants Monitored						
	Frequency	R&P Partisol 2025 Sequential PM10/POC	BGI PQ200 Single Fltr PM10/POC	R&P TEOM Continuous PM10/POC	R&P Partisol 2025 Sequential PM2.5/POC	R&P TEOM Continuous PM2.5/POC	North Latitude	West Longitude
Dirty Socks	Daily			1/2			36-19-33	117-57-19
Shell Cut	Daily			1/2			36-21-59	117-53-52
Flat Rock	Daily			1/2			36-25-12	117-50-12
Bill Stanley	Daily			1			36-21-43	118-00-39
Olancho	Daily			1/2			36-16-03	117-59-35
Lone Pine	Daily			1/4			36-36-30	118-03-15
North Beach	Daily			1/1			36-32-34	117-59-28
Lizard Tail	Daily			1/1			36-32-33	117-56-28
Keeler	Daily	1/6		1/4; 2/4,8***	2/1,2	1***	36-29-16	117-52-14
Coso Junction	Daily			1/4			36-02-40	117-56-44
Mammoth Lakes	Daily	1/5		1			37-38-53	118-59-24
Lee Vining	1-in-3	1/3					38-05-29	119-06-52
Simis Residence	1-in-3		4/3**				38-05-29	118-59-52
Mono Shore	Daily		12/2**	1**			38-04-15	118-56-88
White Mountain*	Daily	1		1			37-22-00	118-21-00
NCORE	Daily						37-21-38	118-19-46

* District's Portable Monitoring Station berth. Located in Tecopa through June 2008.

** Continuous PM10 monitor at Mono Shore started May 2008. Filter-based PM10 monitor discontinued at Mono Shore and Simis Residence August 2008.

*** To be installed third quarter 2009.

APPENDIX B

NCORE Station Monitoring Plan



Great Basin Unified
Air Pollution Control District

**2010 Ambient Air Monitoring
Network Plan
For
National Core (NCORE) Monitoring Station**

located at
White Mountain Research Station
Bishop, California

April 16, 2010

**Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, California 93514**

National Core (NCore) Multi-pollutant Monitoring Stations:

In October 2006 the United States Environmental Protection Agency (EPA) issued final amendments to the ambient air monitoring regulations for criteria pollutants. These amendments are codified in 40 CFR parts 53 and 58. The purpose of the amendments was to enhance ambient air quality monitoring to better serve current and future air quality needs. One of the most significant changes in the regulations was the requirement to establish National Core (NCore) multi-pollutant monitoring stations. These stations will provide data on several pollutants at lower detection limits and replace the National Air Monitoring Station (NAMS) networks that have existed for several years. The final network plan must be submitted to EPA by July 1, 2010 and the stations must be operational by January 1, 2011.

The NCore Network addresses the following monitoring objectives:

- timely reporting of data to the public through AIRNow, air quality forecasting, and other public reporting mechanisms
- support development of emission strategies through air quality model evaluation and other observational methods
- accountability of emission strategy progress through tracking long-term trends of criteria and non-criteria pollutants and their precursors
- support long-term health assessments that contribute to ongoing reviews of the National Ambient Air Quality Standards (NAAQS)
- compliance through establishing nonattainment/attainment areas by comparison with the NAAQS
- support multiple disciplines of scientific research, including; public health, atmospheric and ecological

In 2007 and 2010, EPA provided funding to the Great Basin Unified Air Pollution Control District (the District) to begin the process of establishing an NCore station in the Eastern Sierra region of California. After evaluating the existing network, historical data, meteorology, and topography the District recommends the following changes to its air monitoring network to become effective July 1, 2009, and implemented by January 1, 2010:

- 1) Establish an NCore multi-pollutant monitoring station in the Eastern Sierra region at the White Mountain Research Station (WMRS), 3000 East Line Street, Bishop, California. The location meets the objective for a rural NCore site and meets regional scale criteria for PM_{2.5}, PM₁₀, ozone (O₃), total reactive nitrogen (NO_y), and carbon monoxide (CO).
- 2) For the near-term, collocate the NCore station with the District's existing Portable monitoring station, which collects data for PM₁₀ (continuous), wind speed, wind direction, ambient temperature, and relative humidity.

Monitoring Objective

Determine compliance with NAAQS; observe pollution trends for national data analysis, provide pollution levels for daily index reporting; and provide data for scientific studies.

Table 1 Monitors

Monitor Type	Designation	Analysis Method	Frequency of Sampling
Carbon Monoxide (CO)	NCore	Automated Reference Method utilizing trace level non-dispersive infrared analysis.	Continuously
Sulfur Dioxide (SO ₂)	NCore	Automated Equivalent Method utilizing trace level UV fluorescence analysis	Continuously
PM ₁₀ TEOM	SLAMS	Automated Equivalent Method utilizing <u>T</u> apered <u>E</u> lement <u>O</u> scillating <u>M</u> icrobalance/gravimetric analysis	Continuously
Total Reactive Nitrogen (NO _y)	NCore	Automated trace level chemiluminescence analysis.	Continuously
Meteorological	SLAMS	Air quality measurements approved instrumentation for wind speed, wind direction, humidity, temperature	Continuously

Quality Assurance Status

All Quality Assurance procedures shall be implemented in accordance with 40 CFR 58, Appendix A. The District's current Quality Assurance Project Plan covers PM₁₀, PM_{2.5}, and meteorological measurements. For the trace level instruments, a quality assurance project plan will be developed and submitted prior to use of the trace level instruments and standard operating procedures (SOPs) will be developed for each new instrument used in the project.

Area of Representativeness

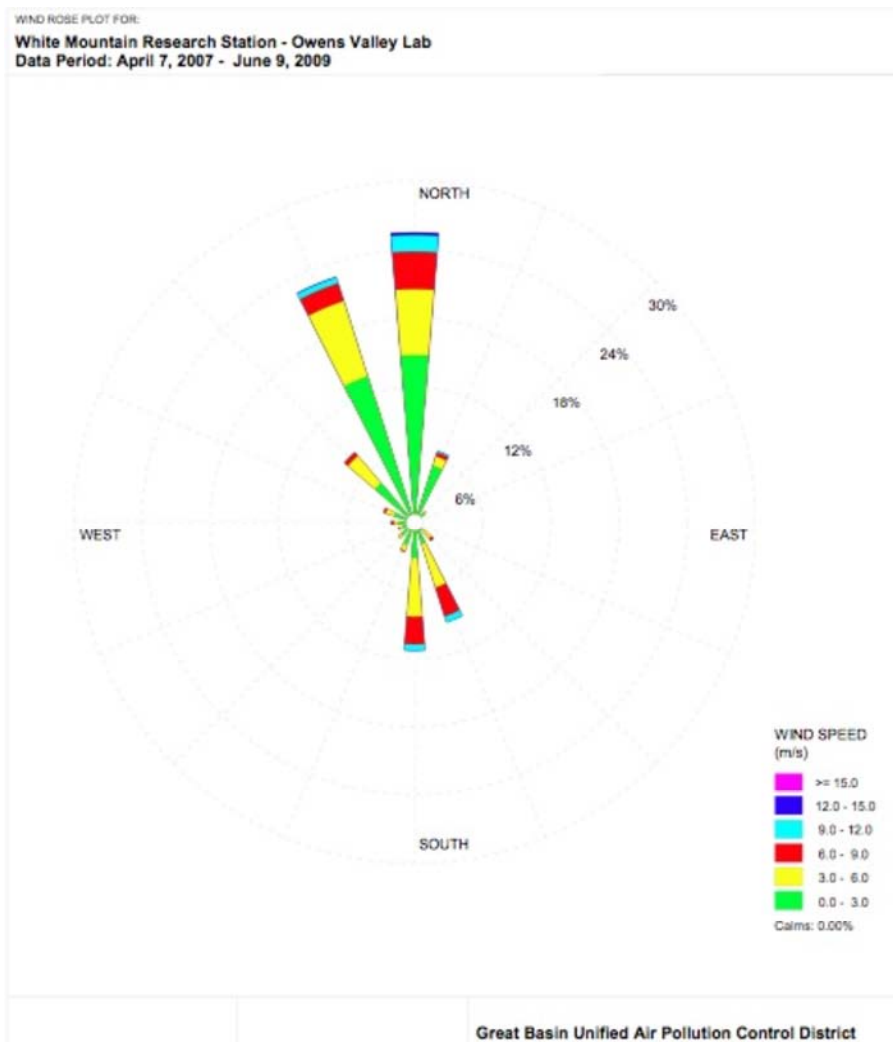
40 CFR Part 58 Appendix D provides design criteria for ambient air monitoring. The monitoring objective for the NCore site is to produce data that represents a large area and therefore the spatial scale of the site is important. The spatial scale defines the physical dimensions of the air parcel nearest to a monitoring site throughout which actual pollutant concentrations are reasonably similar. It is determined by the characteristics of the area surrounding the air monitoring site and the site's distance from nearby air pollution sources such as roadways, factories, etc. In the case of rural NCore stations, which are to be located to determine general background concentrations levels, the spatial scales to be used are regional or larger. Table 2 shows the area of representativeness for each pollutant for the WMRS site.

Table 2: Spatial Scales for Each Pollutant

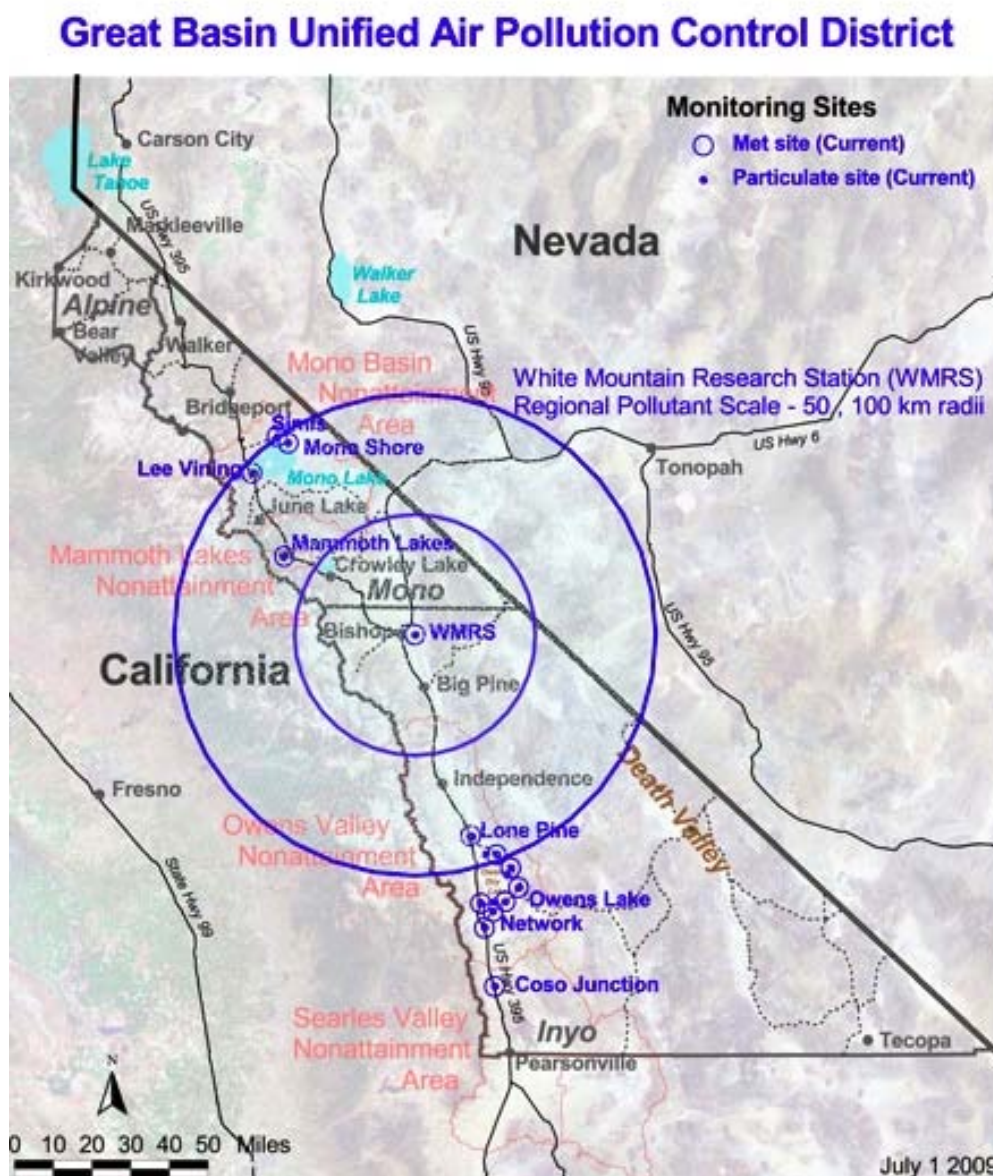
Pollutant	Spatial Scale	Comments
NO _y	Regional Scale	Same scale as used for O ₃
CO	> Middle Scale	No Regional scale for CO
SO ₂	> Neighborhood Scale	No Regional scale for SO ₂
PM ₁₀	> Neighborhood Scale	No Regional scale for PM ₁₀

For regional scale the area covered is tens of kilometers to hundreds of kilometers.

There are no MSAs within the District's current monitoring network due to the sparse population in this high desert setting, approximately 2 people per square mile. On a 10 km scale the land use varies from riparian areas along the Owens River 1.5 kilometers west of the site to light industry, small commercial, and residential in the City of Bishop (population 4,000) 6 kilometers west of the site. The topography of the area varies from high desert to mountain peaks.

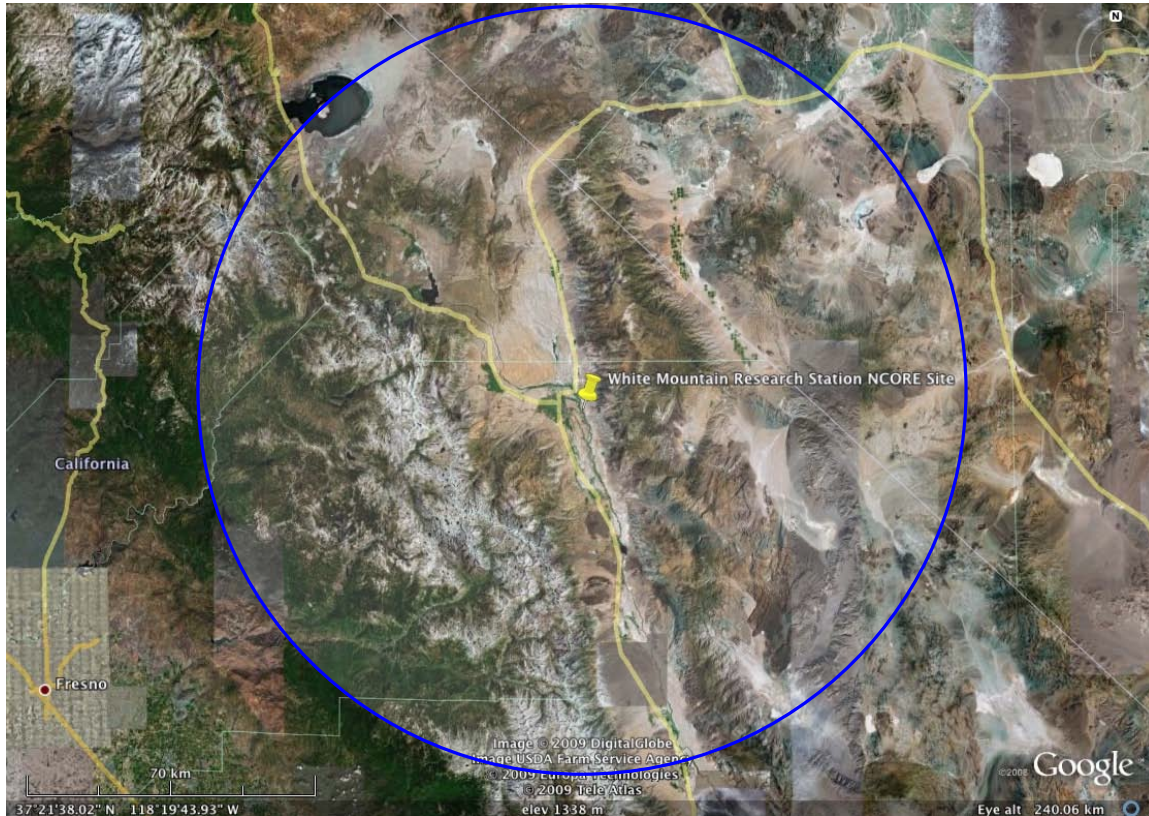


The White Mountain Research Station, where the NCore monitoring station is to be located, is in the Owens Valley, a high-desert valley, the floor of which is at an average elevation of 4,000 feet above mean sea level. The valley is open north to south and is bordered on the east by the White Mountains that rise from the valley floor to an elevation of 10,000 feet, with peaks up to 14,000 feet. The valley is bordered on the west by the Sierra Nevada range, which rises in elevation up to 14,000 feet. As can be seen from the District map and the area-wide view below, the proposed NCore site is located East of the City of Bishop and of the developed area around the City. The wind rose above indicates the prevailing wind directions of north and south, up and down the Owens Valley. The placement of the NCore site east of Bishop provides an excellent location for measuring background pollutant concentrations as there are no major pollution sources, other than particulate matter, for 100km.



White Mountain Research Station
Regional Pollutant Scale 50 and 100 km radii

The Owens Valley, Mono Basin, and Mammoth Lakes Nonattainment areas have been designated as such due to PM₁₀ concentrations that exceed the Federal standard of 150 μ g/m³. The sources of these concentrations are wind-blown dust from the exposed lakebeds of the Owens and Mono lakes and wintertime wood smoke and road cinders, in the case of Mammoth Lakes. The PM₁₀ influence around Mono Lake is largely restricted to the immediate basin by the topography. The influence around Owens Lake is mostly caused by north winds driving the dust south. Occasional south wind storms will drive the dust northward, but the impacts generally reach only to the community of Independence, 20 miles north of Owens Lake and 40 miles south of the station at the White Mountain Research Station.



White Mountain Research Station
Topographic Regional Map (90 km radius shown)

Site Description and Spacing:

Site Name: White Mountain Research Station

AQS ID: 06-027-0002

Location: 3000 East Line Street

County: Inyo

GPS Coordinates: 37°21'38" North Latitude, 118°19'50" West Longitude

Date Established: April 7, 2006

Inspection Date: August 20, 2009

Inspection By: Catherine Brown, EPA IX

Site Approval Status: Approved



White Mountain Research Station Compound



The station is located on the grounds of the University of California White Mountain Research Station. The location is in the northeast portion of Inyo County and is approximately 0.5 km east of the Owens River and 4 km east of Bishop, California.

NCore and PM_{2.5} SLAMS Siting Criteria

Appendix E to 40 CFR Part 58-*Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring* contains specific location criteria applicable to NCore and SLAMS siting. The following measurements and data were obtained for evaluation of compliance with the criteria.

1. Horizontal Placement of Sampling Probes:

The gaseous instruments will be placed in a 10'w x 16' l x 8'h air monitoring shelter to be located in an open area. The nearest building is the WMRS maintenance building approximately 150 meters east of the station. The sample probe inlets will be installed approximately 4 meters above the ground. The Districts Portable monitoring station will be placed next to the air monitoring shelter and will included a 10-meter "nested" meteorological tower.

Any manual particulate samplers to be used for the NCore program will be placed on the roof of the monitoring shelter, on the roof of the District's Portable monitoring station adjacent to the NCore shelter, or on a metal platform behind the NCore shelter. The height of the inlets of the particulate samplers will vary between 3-4 meters. The inlet for the continuous PM10 monitor in the Portable station is approximately 1.5 meters above the roof and approximately 4.25 meters above the ground. Inlets for the continuous particulate samplers in the NCore station will be placed on the roof of the air monitoring shelter with the sample inlets 1.5 to 2 meters above the roof (4 meters above ground). The control units will be located inside the temperature controlled shelter.

2. Spacing from Obstructions:

There are no obstructions to air flow around the site. The WMRS maintenance building is located 150 meters east of the proposed NCore station location and is 4 meters in height. This potential obstruction is 37 times the height of the obstruction away from the station and is not in a quadrant where it would affect the prevailing wind direction.

3. Spacing from Roadways:

Tables E-1, E-2, and Figure E-1 of 40 CFR Part 58 Appendix E list the minimum distances from roadways a monitoring probe needs to be based on the average daily traffic (ADT) counts. Table 3 summarizes the findings and includes the minimum separation distance from roadways for each pollutant. ADT counts were obtained from traffic count data from the California Department of Transportation's (CalTrans) website, at <http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2005all>

Table 3
Spacing from Roadways Analysis

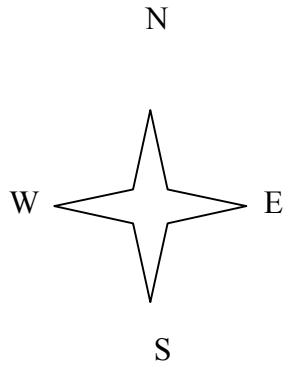
Roadway	ADT	Distance from site (meters)	Minimum Distance Required (meters)			
			Ozone Table E-1	NO/NO _y Table E-1	CO Table E-2	PM Figure E-1
US Highway 395	14,000 (2005)	4,000	40	30	45	80
East Line Street	<1000 (estimated)	85	40	30	45	80

4. Spacing from Minor Sources:

The closest source to the site is the community of Bishop, California, 4 kilometers east of the site. The greater Bishop area has a population of approximately 6,100. Pollutant sources are limited to small businesses, residential home heating, vehicular traffic (14,000 per day) along US Highway 395. There are three permitted sources approximately 3 kilometers east of the site. These sources are listed below (Table 4) along with their emission rates. The first two are concrete batch plants and the last one is a hot mix asphalt plant. These plants' operating schedules are limited to 5 or 6 days per week and to a certain number of weeks per year, usually in the summer months.

Table 4
Minor Source Emissions

Source	Emissions Type	Hours of Operation Per day	Emissions Rates	
			Pounds Per Hr. For Op	Pounds per hour 24hrs/day
7/11 Materials	particulate	14	5.7	0.26
Hiatt	particulate	12	3	1.13
SNC	Particulate	10	18.2	0.53



Direction	Description	Distance from Site
North	Power line along Line Street/Laws-Poleta Road	85 meters
North East	White Mountains	10 kilometers
East	WMRS Maintenance Building (maintenance and repair shop)	150 meters
South East	Owens Valley, open land	
South	Owens Valley, open land	
South west	Owens Valley, open land	
West	Bench above Owens River	600 meters
North West	Owens Valley, open land	



Site Details:

This Google Earth™ image indicates where the air monitoring shelter will be located on the White Mountain Research Station compound. The shelter will be 8' w x 16'l x 8' h. The roof of the shelter is flat to support the sample inlets for the continuous particulate samplers and has additional room for other samplers if the need arises. The 10-meter meteorological tower and the District's Portable monitoring station will be placed next to the NCore shelter. The meteorological tower is a "nested" type that provides for easy servicing and calibration of the meteorological instruments. The shelter will be wired for 200 amp service and have internet and cellular telephone connections. The shelter will have a heating and air conditioning system that will maintain indoor temperatures between 20-30 ° C.

APPENDIX C

Site Reports



GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **A-Tower**

Site Number:	1001	TEOM Installed?:	No	UTM X:	416353
County:	Inyo	TEOM Type:	N/A	UTM Y:	4041390
FIPS Code:	06-027	Met Installed?:	Yes		
AIRS Number:		Site Operator:	Sondra Grimm		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	North-central Owens Lake		
Address:	Owens Lake, CA		
Distance to Road:	2.2 km north to Hwy 136.		
Traffic Count:	TBD		
Groundcover:	Course sands		
Representative Area:	North-central Owens Lake		
Pollutant:	N/A		
Monitor Objective:	Local meteorology		
Spatial Scale:	Neighborhood Scale	Start Date:	3/1/2000
Sampling Method:	N/A	Operation Schedule:	5 minute
Analysis Method:	N/A	Sampling Season:	Year-round
Probe Height:	10 meters		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	N/A		
Distance from Obstructions Not on Roof:	N/A		
Distance From Trees:	N/A		
Distance to Furnace or Incinerator:	N/A		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	N/A		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	N/A		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables: ☒ Variable: Temperature
☐ Variable: Barometric Pressure
☒ Variable: Precipitation

☒ Variable: Wind Speed
☒ Variable: Wind Direction
☒ Variable: Relative Humidity



GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **B-Tower**

Site Number:	1018	TEOM Installed?:	No	UTM X:
County:	Inyo	TEOM Type:	N/A	UTM Y:
FIPS Code:	06-027	Met Installed?:	Yes	
AIRS Number:		Site Operator:	Sondra Grimm	
Current:	Yes	Collecting Agency:	GBUAPCD	

Location:	Southeast Owens Lake		
Address:	Owens Lake, CA		
Distance to Road:	3 km SE to Hwy 190		
Traffic Count:	TBD		
Groundcover:	Course sands		
Representative Area:	South-eastern Owens Lake		
Pollutant:	N/A		
Monitor Objective:	Local Meteorology		
Spatial Scale:	Neighborhood Scale	Start Date:	3/2/2010
Sampling Method:	N/A	Operation Schedule:	5 minute
Analysis Method:	N/A	Sampling Season:	Year-round
Probe Height:	10 meters		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	N/A		
Distance from Obstructions Not on Roof:	N/A		
Distance From Trees:	N/A		
Distance to Furnace or Incinerator:	N/A		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	N/A		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	N/A		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables: ☒ Variable: Temperature
☐ Variable: Barometric Pressure
☒ Variable: Precipitation

☒ Variable: Wind Speed
☒ Variable: Wind Direction
☒ Variable: Relative Humidity



GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Coso Junction TEOM**

Site Number:	696	TEOM Installed?:	Yes	UTM X:	414978
County:	Inyo	TEOM Type:	TEOM	UTM Y:	3989840
FIPS Code:	06-027	Met Installed?:	Yes		
AIRS Number:	1001	Site Operator:	Dan Johnson		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	Hwy 395 at Gill Station - Coso Road		
Address:	3 Gill Station Rd, Olancho, CA 93549		
Distance to Road:	0.2 km to Gill Station Road		
Traffic Count:	TBD		
Groundcover:	Dirt, gravel, brush		
Representative Area:	Regional		
Pollutant:	PM-10		
Monitor Objective:	Representative Concentration		
Spatial Scale:	Neighborhood Scale	Start Date:	5/10/2006
Sampling Method:	PM-10 Impactor	Operation Schedule:	1:1
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	4.5 meters		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	None		
Distance from Obstructions Not on Roof:	20 meters to tower		
Distance From Trees:	0.5 km		
Distance to Furnace or Incinerator:	None		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	N/A		
Suitable comparison against annual PM2.5?:	N/A		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	Bi-weekly		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables: ☒ Variable: Temperature
☐ Variable: Barometric Pressure
☒ Variable: Precipitation

☒ Variable: Wind Speed
☒ Variable: Wind Direction
☒ Variable: Relative Humidity



Site Name: **Coso Junction TEOM**

Site Photo:



North-
facing
photo:



East-facing
photo:



West-
facing
photo:



South-
facing
photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Cottonwood**

Site Number:	7491	TEOM Installed?:	No	UTM X:	411799
County:	Inyo	TEOM Type:	N/A	UTM Y:	4028440
FIPS Code:	06-027	Met Installed?:	Yes		
AIRS Number:		Site Operator:	Sondra Grimm		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	South-central Owens Lake		
Address:	Owens Lake, CA		
Distance to Road:	3 km to Hwy 395 (west)		
Traffic Count:	TBD		
Groundcover:	Course sand		
Representative Area:	Central Owens Lake		
Pollutant:	N/A		
Monitor Objective:	Local Meteorology		
Spatial Scale:	Neighborhood Scale	Start Date:	5/17/2001
Sampling Method:	N/A	Operation Schedule:	5 minute
Analysis Method:	N/A	Sampling Season:	Year-round
Probe Height:	10 meters		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	N/A		
Distance from Obstructions Not on Roof:	N/A		
Distance From Trees:	None		
Distance to Furnace or Incinerator:	None		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	N/AN/A		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	N/A		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

☐ Variable: Temperature

☐ Variable: Barometric Pressure

☐ Variable: Precipitation

☒ Variable: Wind Speed

☒ Variable: Wind Direction

☐ Variable: Relative Humidity



GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Delta**

Site Number:	7191	TEOM Installed?:	No	UTM X:	410497
County:	Inyo	TEOM Type:	N/A	UTM Y:	4041460
FIPS Code:	06-027	Met Installed?:	Yes		
AIRS Number:		Site Operator:	Sondra Grimm		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	Owens River delta area on Owens Lake		
Address:	Owens Lake, CA		
Distance to Road:	3.2 km west to Hwy 395		
Traffic Count:	TBD		
Groundcover:	Salt crust barren lakebed		
Representative Area:	Delta area		
Pollutant:	N/A		
Monitor Objective:	Local Meteorology		
Spatial Scale:	Neighborhood scale	Start Date:	6/19/2000
Sampling Method:	N/A	Operation Schedule:	5 minute
Analysis Method:	N/A	Sampling Season:	Year-round
Probe Height:	10 meters		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	N/A		
Distance from Obstructions Not on Roof:	N/A		
Distance From Trees:	N/A		
Distance to Furnace or Incinerator:	N/A		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	N/A		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	N/A		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

☐ Variable: Temperature

☐ Variable: Barometric Pressure

☒ Variable: Precipitation

☒ Variable: Wind Speed

☒ Variable: Wind Direction

☐ Variable: Relative Humidity



GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Dirty Socks TEOM**

Site Number:	1010	TEOM Installed?:	Yes	UTM X:	414272
County:	Inyo	TEOM Type:	TEOM	UTM Y:	4020550
FIPS Code:	06-027	Met Installed?:	Yes		
AIRS Number:	0022	Site Operator:	Steve Mobley		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	South shore, Owens Lake		
Address:	DIRTY SOX HOT SPRING - HWY 190, Owens Lake, CA		
Distance to Road:	402 meters to Hwy 190		
Traffic Count:	TBD		
Groundcover:	Gravel, sand, water, small shrubs		
Representative Area:	South shore, Owens Lake		
Pollutant:	PM10		
Monitor Objective:	Representative Concentration		
Spatial Scale:	Neighborhood Scale	Start Date:	6/23/1999
Sampling Method:	PM-10 Impactor	Operation Schedule:	hourly
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	4.2 meters		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	N/A		
Distance from Obstructions Not on Roof:	10.0 (Met) - 14.6 meters (powerline)		
Distance From Trees:	N/A		
Distance to Furnace or Incinerator:	N/A		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	N/A		
Suitable comparison against annual PM2.5?:	N/A		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	Bi-weekly		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

- ☒ Variable: Temperature
☐ Variable: Barometric Pressure
☐ Variable: Precipitation

- ☒ Variable: Wind Speed
☒ Variable: Wind Direction
☐ Variable: Relative Humidity



Site Name: **Dirty Socks TEOM**

Site Photo:



North-facing photo:



East-facing photo:



West-facing photo:



South-facing photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Flat Rock TEOM**

Site Number:	1011	TEOM Installed?:	Yes	UTM X:	424989
County:	Inyo	TEOM Type:	TEOM	UTM Y:	4030860
FIPS Code:	06-027	Met Installed?:	Yes		
AIRS Number:	0024	Site Operator:	Steve Mobley		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	Eastern shore, Owens Lake		
Address:	FLAT ROCK - HIGHWAY 190 - 1 MILE W OF HWY 136 JUNCTION, Owens Lake, CA		
Distance to Road:	54.8 meters to Hwy 190		
Traffic Count:	TBD		
Groundcover:	Sand, rocks, shrubs		
Representative Area:	East shore, Owens Lake		
Pollutant:	PM-10		
Monitor Objective:	Representative Concentration		
Spatial Scale:	Neighborhood Scale	Start Date:	12/14/2000
Sampling Method:	PM-10 Impactor	Operation Schedule:	hourly
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	4.2 meters		
Distance to Supporting Structure:	0		
Distance from Obstructions on Roof:	0		
Distance from Obstructions Not on Roof:	2.4 m (MET); 3.8 meters (powerline)		
Distance From Trees:	No trees		
Distance to Furnace or Incinerator:	0		
Distance Between Collocated Monitors:	0		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	No		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	Bi-weekly		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

- ☒ Variable: Temperature
☐ Variable: Barometric Pressure
☐ Variable: Precipitation

- ☒ Variable: Wind Speed
☒ Variable: Wind Direction
☐ Variable: Relative Humidity



GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Flat Rock TEOM**

Site Photo:



North-facing photo:



East-facing photo:



West-facing photo:



South-facing photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Keeler MET**

Site Number:	697	TEOM Installed?:	No	UTM X:	421739
County:	Inyo	TEOM Type:	N/A	UTM Y:	4038590
FIPS Code:	06-027	Met Installed?:	Yes		
AIRS Number:	1002	Site Operator:	Scott Weaver		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	Northeast of Keeler, CA		
Address:	Keeler, CA		
Distance to Road:	75 meters		
Traffic Count:	3/day		
Groundcover:	sand/brush		
Representative Area:	Community of Keeler		
Pollutant:	N/A		
Monitor Objective:	Local Meteorology		
Spatial Scale:	Neighborhood Scale	Start Date:	3/14/1985
Sampling Method:	N/A	Operation Schedule:	5 minute
Analysis Method:	N/A	Sampling Season:	Year-round
Probe Height:	10 meters		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	N/A		
Distance from Obstructions Not on Roof:	20 meters to trees		
Distance From Trees:	20 meters		
Distance to Furnace or Incinerator:	N/A		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	N/A		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	N/A		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	N/A		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

- ☒ Variable: Temperature
☐ Variable: Barometric Pressure
☒ Variable: Precipitation

- ☒ Variable: Wind Speed
☒ Variable: Wind Direction
☐ Variable: Relative Humidity



Site Name: **Keeler MET**

Site Photo:



North-facing photo:



East-facing photo:



West-facing photo:



South-facing photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Keeler#1 PM2.5 FDMS**

Site Number:	728	TEOM Installed?:	Yes	UTM X:	421982
County:	Inyo	TEOM Type:	TEOM	UTM Y:	4038410
FIPS Code:	06-027	Met Installed?:	No		
AIRS Number:	1003	Site Operator:	Scott Weaver		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	Located on top of metal storage unit and monitoring shelter.		
Address:	190 CERRO GORDO ROAD, KEELER, CA		
Distance to Road:	20 meters		
Traffic Count:	TBD		
Groundcover:	Pavement		
Representative Area:	Community of Keeler		
Pollutant:	PM-2.5		
Monitor Objective:	Representative Concentration		
Spatial Scale:	Neighborhood	Start Date:	6/15/2009
Sampling Method:	PM-10 Impactor and VSCC	Operation Schedule:	hourly
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	4 meters		
Distance to Supporting Structure:			
Distance from Obstructions on Roof:	None		
Distance from Obstructions Not on Roof:	10 meters to antennae		
Distance From Trees:	75 meters		
Distance to Furnace or Incinerator:	N/A		
Distance Between Collocated Monitors:	1.7 meters to 2.5 pri partisol		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	Yes		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	Bi-weekly		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

☐ Variable: Temperature

☐ Variable: Barometric Pressure

☐ Variable: Precipitation

☐ Variable: Wind Speed

☐ Variable: Wind Direction

☐ Variable: Relative Humidity



GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Keeler#1 PM2.5 FDMS**

Site Photo:



North-facing photo:



East-facing photo:



West-facing photo:



South-facing photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Keeler#2 PM10 1° TEOM**

Site Number:	728	TEOM Installed?:	Yes	UTM X:	421982
County:	Inyo	TEOM Type:	TEOM	UTM Y:	4038410
FIPS Code:	06-027	Met Installed?:	No		
AIRS Number:	1003	Site Operator:	Scott Weaver		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	Located on top of metal storage unit and monitoring shelter.		
Address:	190 CERRO GORDO ROAD, KEELER, CA		
Distance to Road:	19 meters		
Traffic Count:	TBD		
Groundcover:	Pavement		
Representative Area:	Community of Keeler		
Pollutant:	PM-10		
Monitor Objective:	Representative Concentration		
Spatial Scale:	Neighborhood	Start Date:	6/15/2009
Sampling Method:	PM-10 Impactor	Operation Schedule:	hourly
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	4 meters		
Distance to Supporting Structure:	None		
Distance from Obstructions on Roof:	None		
Distance from Obstructions Not on Roof:	9 meters to antennae		
Distance From Trees:	75 meters		
Distance to Furnace or Incinerator:	N/A		
Distance Between Collocated Monitors:	1.7 meters to colocated TEOM (#3); 1.17 m to 10pri Partisol		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	No		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	Bi-weekly		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

☐ Variable: Temperature

☐ Variable: Barometric Pressure

☐ Variable: Precipitation

☐ Variable: Wind Speed

☐ Variable: Wind Direction

☐ Variable: Relative Humidity



GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name:

Keeler#2 PM10 1° TEOM

Site Photo:



North-
facing
photo:



East-facing
photo:



West-
facing
photo:



South-
facing
photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Keeler#3 PM10 2° TEOM**

Site Number:	728	TEOM Installed?:	Yes	UTM X:	421982
County:	Inyo	TEOM Type:	TEOM	UTM Y:	4038410
FIPS Code:	06-027	Met Installed?:	No		
AIRS Number:	1003	Site Operator:	Scott Weaver		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	Located on top of metal storage unit and monitoring shelter.		
Address:	190 CERRO GORDO ROAD, KEELER, CA		
Distance to Road:	18 meters		
Traffic Count:	TBD		
Groundcover:	pavement		
Representative Area:	Community of Keeler		
Pollutant:	PM-10		
Monitor Objective:	Representative Concentration		
Spatial Scale:	Neighborhood	Start Date:	6/15/2009
Sampling Method:	PM-10 Impactor	Operation Schedule:	hourly
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	4 meters		
Distance to Supporting Structure:	None		
Distance from Obstructions on Roof:	None		
Distance from Obstructions Not on Roof:	10 meters to antennae		
Distance From Trees:	75 meters		
Distance to Furnace or Incinerator:	N/A		
Distance Between Collocated Monitors:	1.14 m to primary TEOM (#2); 1.14 m to 10pri Partisol		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	yes		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	Bi-weekly		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

☐ Variable: Temperature

☐ Variable: Barometric Pressure

☐ Variable: Precipitation

☐ Variable: Wind Speed

☐ Variable: Wind Direction

☐ Variable: Relative Humidity



GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name:

Keeler#3 PM10 2° TEOM

Site Photo:



North-
facing
photo:



East-facing
photo:



West-
facing
photo:



South-
facing
photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Lee Vining**

Site Number:	779	TEOM Installed?:	No	UTM X:	314232
County:	Mono	TEOM Type:	N/A	UTM Y:	4202840
FIPS Code:	06-051	Met Installed?:	No		
AIRS Number:	0005	Site Operator:	Guy Davis		
Current:	No	Collecting Agency:	GBUAPCD		

Location:	Community of Lee Vining, CA		
Address:	HWY 395, LEE VINING		
Distance to Road:	84 m to Hwy 395; 179 m to Matty Ave.		
Traffic Count:	TBD		
Groundcover:	Lawn (north); Gravel (south)		
Representative Area:	Lee Vining, CA		
Pollutant:	PM-10		
Monitor Objective:	Representative Concnetration		
Spatial Scale:	Neighborhood Scale	Start Date:	1/1/1981
Sampling Method:	PM-10 Impactor	Operation Schedule:	1:3
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	3 meters AGL		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	N/A		
Distance from Obstructions Not on Roof:	N/A		
Distance From Trees:	19.8 m		
Distance to Furnace or Incinerator:	N/A		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	Yes		
Suitable comparison against annual PM2.5?:	No		
Frequency of flow rate verification for manual PM sampler audit:	Monthly		
Frequency of flow rate verification for automated PM analyzers audit:	N/A		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

☐ Variable: Temperature

☐ Variable: Barometric Pressure

☐ Variable: Precipitation

☐ Variable: Wind Speed

☐ Variable: Wind Direction

☐ Variable: Relative Humidity



GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Lee Vining**

Site Photo:



North-facing photo:



East-facing photo:



West-facing photo:



South-facing photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Lizard Tail TEOM**

Site Number:	1016	TEOM Installed?:	Yes	UTM X:	415701
County:	Inyo	TEOM Type:	TEOM	UTM Y:	4044610
FIPS Code:	06-027	Met Installed?:	Yes		
AIRS Number:	0028	Site Operator:	Scott Weaver		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	Owens Lake NE Shoreline		
Address:	Lizard Tail - NE Shoreline Owens Lake, CA		
Distance to Road:	275 meters		
Traffic Count:	TBD		
Groundcover:	Sand and shrubs		
Representative Area:	4 km area		
Pollutant:	PM-10		
Monitor Objective:	Representative Concentration		
Spatial Scale:	Neighborhood Scale	Start Date:	1/16/2008
Sampling Method:	PM-10 Impactor	Operation Schedule:	hourly
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	2 meters above roof; 4.6 meters AGL.		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	None		
Distance from Obstructions Not on Roof:	Met tower: 4.6 meters; power pole 9.1 meters		
Distance From Trees:	N/A; no trees		
Distance to Furnace or Incinerator:	N/A		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	N/A		
Suitable comparison against annual PM2.5?:	No		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	Bi-weekly		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

- ☒ Variable: Temperature
☐ Variable: Barometric Pressure
☐ Variable: Precipitation

- ☒ Variable: Wind Speed
☒ Variable: Wind Direction
☐ Variable: Relative Humidity



Site Name:

Lizard Tail TEOM

Site Photo:



North-
facing
photo:



East-facing
photo:



West-
facing
photo:



South-
facing
photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Lone Pine FDMS**

Site Number:	699	TEOM Installed?:	Yes	UTM X:	405400
County:	Inyo	TEOM Type:	FDMS TEOM	UTM Y:	4052020
FIPS Code:	06-027	Met Installed?:	No		
AIRS Number:	0004	Site Operator:	Scott Weaver		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	Southern Inyo Hospital		
Address:	501 East Locust Rd, Lone Pine, CA		
Distance to Road:	65 meters		
Traffic Count:	TBD		
Groundcover:	rooftop, asphalt roofing		
Representative Area:	Community of Lone Pine		
Pollutant:	PM-10		
Monitor Objective:	Representative Concentration		
Spatial Scale:	Neighborhood Scale	Start Date:	4/17/2008
Sampling Method:	PM-10 Impactor	Operation Schedule:	hourly
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	2.6 meters above roof; 6.5 m AGL		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	30 meters		
Distance from Obstructions Not on Roof:	29 meters		
Distance From Trees:	29 meters		
Distance to Furnace or Incinerator:	65 meters		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	No		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	Bi-weekly		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

☐ Variable: Temperature

☐ Variable: Barometric Pressure

☐ Variable: Precipitation

☐ Variable: Wind Speed

☐ Variable: Wind Direction

☐ Variable: Relative Humidity



Site Name: **Lone Pine FDMS**

Site Photo:



North-facing photo:



East-facing photo:



West-facing photo:



South-facing photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Lone Pine MET**

Site Number:	711	TEOM Installed?:	No	UTM X:	406300
County:	Inyo	TEOM Type:	N/A	UTM Y:	4051850
FIPS Code:	06-027	Met Installed?:	Yes		
AIRS Number:	0019	Site Operator:	Scott Weaver		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	Lone Pine Wastewater Treatment Plant		
Address:	OUT AT THE SEWER PONDS ONE MILE E OF LOCUST ST		
Distance to Road:	30 meters		
Traffic Count:	1 per week		
Groundcover:	dirt and grass		
Representative Area:	rural area east of Lone Pine		
Pollutant:	N/A		
Monitor Objective:	Local Meteorology		
Spatial Scale:	Neighborhood Scale	Start Date:	5/14/1986
Sampling Method:	N/A	Operation Schedule:	5 minutes
Analysis Method:	N/A	Sampling Season:	Year-round
Probe Height:	10 meters		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	N/A		
Distance from Obstructions Not on Roof:	40 meters to phone pole		
Distance From Trees:	100 meters		
Distance to Furnace or Incinerator:	N/A		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	N/A		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	N/A		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

- ☒ Variable: Temperature
☐ Variable: Barometric Pressure
☐ Variable: Precipitation

- ☒ Variable: Wind Speed
☒ Variable: Wind Direction
☐ Variable: Relative Humidity



Site Name: **Lone Pine MET**

Site Photo:



North-facing photo:



East-facing photo:



West-facing photo:



South-facing photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Mammoth FDMS**

Site Number:	785	TEOM Installed?:	Yes	UTM X:	325914
County:	Mono	TEOM Type:	FDMS TEOM	UTM Y:	4168600
FIPS Code:	06-051	Met Installed?:	Yes		
AIRS Number:	0001	Site Operator:	Guy Davis		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	Town of Mammoth Lakes, CA		
Address:	Gateway Home Center, Mammoth Lakes, CA		
Distance to Road:	30.5 meters		
Traffic Count:	TBD		
Groundcover:	Urban; asphalt composite roof and pavement		
Representative Area:	Town of Mammoth Lakes		
Pollutant:	PM10		
Monitor Objective:	Representative Concentration		
Spatial Scale:	Neighborhood Scale	Start Date:	1/1/2006
Sampling Method:	PM-10 Impactor	Operation Schedule:	hourly
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	FDMS: 4 meters above roof; Partisol: 3 meters above roof; (roof at ~10m)		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	N/A		
Distance from Obstructions Not on Roof:	30.5 meters (at 55 degrees and 180 degrees)		
Distance From Trees:	40 meters		
Distance to Furnace or Incinerator:	N/A		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	N/A		
Suitable comparison against annual PM2.5?:	N/A		
Frequency of flow rate verification for manual PM sampler audit:	monthly - partisol		
Frequency of flow rate verification for automated PM analyzers audit:	bi-weekly - FDMS		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

- ☒ Variable: Temperature
☐ Variable: Barometric Pressure
☐ Variable: Precipitation

- ☒ Variable: Wind Speed
☒ Variable: Wind Direction
☐ Variable: Relative Humidity



Site Name:

Mammoth FDMS

Site Photo:



North-facing photo:



East-facing photo:



West-facing photo:



South-facing photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Mill**

Site Number:	1013	TEOM Installed?:	No	UTM X:	423666
County:	Inyo	TEOM Type:	N/A	UTM Y:	4035140
FIPS Code:	06-027	Met Installed?:	Yes		
AIRS Number:		Site Operator:	Dan Johnson		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	2 miles south of Keeler		
Address:	East shore Owens Lake, CA		
Distance to Road:	0.4 km to Hwy 190.		
Traffic Count:	TBD		
Groundcover:	Gravel		
Representative Area:	Regional		
Pollutant:	N/A		
Monitor Objective:	Local Meteorology		
Spatial Scale:	Neighborhood Scale	Start Date:	11/14/2001
Sampling Method:	N/A	Operation Schedule:	5 minute
Analysis Method:	N/A	Sampling Season:	Year-round
Probe Height:	10 meters		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	N/A		
Distance from Obstructions Not on Roof:	None		
Distance From Trees:	None		
Distance to Furnace or Incinerator:	None		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	N/A		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	N/A		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables: ☒ Variable: Temperature
☐ Variable: Barometric Pressure
☒ Variable: Precipitation

☒ Variable: Wind Speed
☒ Variable: Wind Direction
☒ Variable: Relative Humidity



GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Mill**

Site Photo:



North-
facing
photo:



East-facing
photo:



West-
facing
photo:



South-
facing
photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Mono Shore TEOM**

Site Number:	901	TEOM Installed?:	Yes	UTM X:	329153
County:	Mono	TEOM Type:	TEOM	UTM Y:	4215350
FIPS Code:	06-051	Met Installed?:	Yes		
AIRS Number:	0011	Site Operator:	Guy Davis		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	Northeast shore of Mono Lake		
Address:	Mono Lake, CA		
Distance to Road:	4.4 km		
Traffic Count:	TBD		
Groundcover:	Course sand		
Representative Area:	Beach area, Mono Lake, CA		
Pollutant:	PM-10		
Monitor Objective:	High Concentration		
Spatial Scale:	Neighborhood Scale	Start Date:	6/2/2008
Sampling Method:	PM-10 Impactor	Operation Schedule:	hourly
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	10.0 m (MET); 2.5m TEOM		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	N/A		
Distance from Obstructions Not on Roof:	N/A		
Distance From Trees:	50 meters to dune shrubs		
Distance to Furnace or Incinerator:	N/A		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	No		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	Bi-weekly		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables: ☒ Variable: Temperature
☐ Variable: Barometric Pressure
☐ Variable: Precipitation

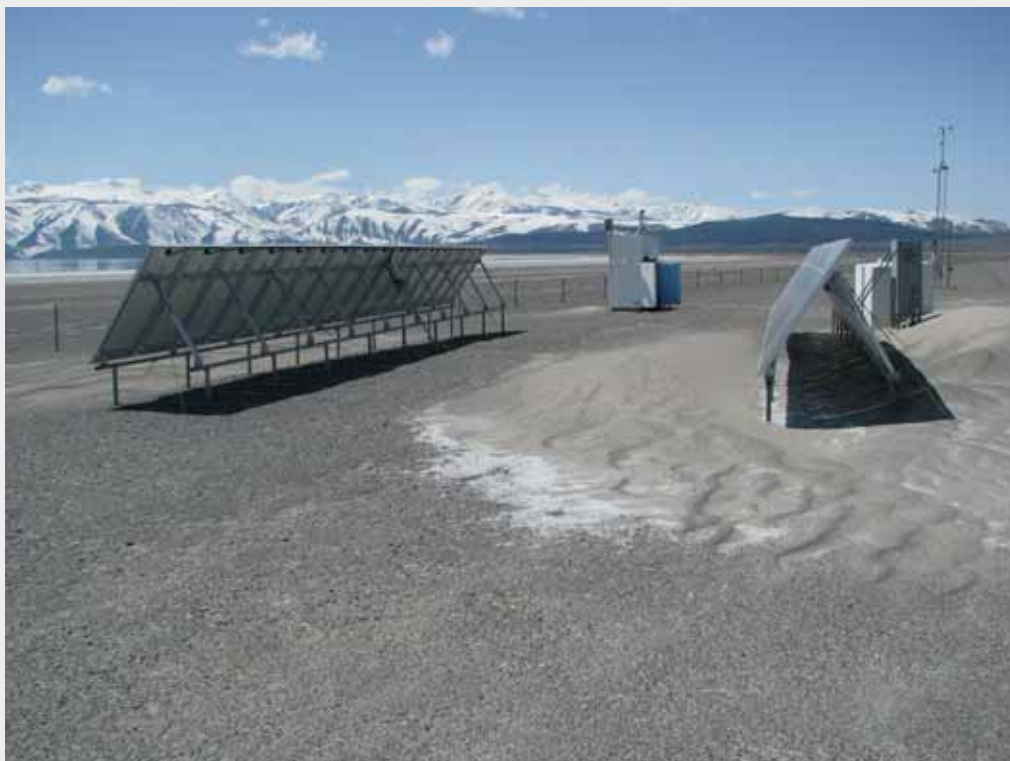
☒ Variable: Wind Speed
☒ Variable: Wind Direction
☐ Variable: Relative Humidity



Site Name:

Mono Shore TEOM

Site Photo:



North-facing photo:



East-facing photo:



West-facing photo:



South-facing photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **North Beach TEOM**

Site Number:	1017	TEOM Installed?:	Yes	UTM X:	411283
County:	Inyo	TEOM Type:	TEOM	UTM Y:	4044610
FIPS Code:	06-027	Met Installed?:	No		
AIRS Number:	0029	Site Operator:	Scott Weaver		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	North shore, Owens Lake		
Address:	Owens Lake, CA		
Distance to Road:	30 meters		
Traffic Count:	TBD		
Groundcover:	gravel		
Representative Area:	North shore, Owens Lake		
Pollutant:	PM-10		
Monitor Objective:	Representative Concentrations		
Spatial Scale:	Neighborhood Scale	Start Date:	11/20/2008
Sampling Method:	PM-10 Impactor	Operation Schedule:	hourly
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	2 meters above roof; 4.4 meters AGL		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	None		
Distance from Obstructions Not on Roof:	30 meters to power pole		
Distance From Trees:	No trees		
Distance to Furnace or Incinerator:	N/A		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	N/A		
Suitable comparison against annual PM2.5?:	No		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	Bi-weekly		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

☐ Variable: Temperature

☐ Variable: Barometric Pressure

☐ Variable: Precipitation

☐ Variable: Wind Speed

☐ Variable: Wind Direction

☐ Variable: Relative Humidity



Site Name:

North Beach TEOM

Site Photo:



North-facing photo:



East-facing photo:



West-facing photo:



South-facing photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
760.872.8211 / <http://www.gbuapcd.org>

Site Name: **Olancha 3 TEOM**

Site Number:	729	TEOM Installed?:	Yes	UTM X:	410806
County:	Inyo	TEOM Type:	TEOM	UTM Y:	4014080
FIPS Code:	06-027	Met Installed?:	Yes		
AIRS Number:	0021	Site Operator:	Dan Johnson		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	Community of Olancha, CA		
Address:	131 WALKER CREEK RD., Olancha, CA 93549		
Distance to Road:	0.5 KM to Hwy 395		
Traffic Count:	TBD		
Groundcover:	Sand, gravel, brush		
Representative Area:	Community of Olancha		
Pollutant:	PM-10		
Monitor Objective:	Representative Concentration		
Spatial Scale:	Neighborhood Scale	Start Date:	12/20/1995
Sampling Method:	Gravimetry	Operation Schedule:	hourly
Analysis Method:	PM10 Impactor	Sampling Season:	Year-round
Probe Height:	4.5 meters		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	None		
Distance from Obstructions Not on Roof:	10 meters to tower		
Distance From Trees:	0.5 km		
Distance to Furnace or Incinerator:	None		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	No		
Frequency of flow rate verification for manual PM sampler audit:			
Frequency of flow rate verification for automated PM analyzers audit:	Bi-weekly		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables: ☒ Variable: Temperature
☒ Variable: Barometric Pressure
☐ Variable: Precipitation

☒ Variable: Wind Speed
☒ Variable: Wind Direction
☒ Variable: Relative Humidity



Site Name:

Olancha 3 TEOM

Site Photo:



North-
facing
photo:



East-facing
photo:



West-
facing
photo:



South-
facing
photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
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Site Name: **Portable-2 TEOM**

Site Number:		TEOM Installed?:	Yes	UTM X:	
County:	Inyo	TEOM Type:	TEOM	UTM Y:	
FIPS Code:	06-027	Met Installed?:	Yes		
AIRS Number:		Site Operator:	Dan Johnson		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	Variable, short (3-day periods) monitoring of source areas on Owens Lake		
Address:	Owens Lake, CA		
Distance to Road:	Variable		
Traffic Count:	N/A		
Groundcover:	Sandy crusts		
Representative Area:	Owens Lake		
Pollutant:	PM-10		
Monitor Objective:	High concentration		
Spatial Scale:	Neighborhood scale	Start Date:	
Sampling Method:	PM-10 Impactor	Operation Schedule:	hourly
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	2.4 meters		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	None		
Distance from Obstructions Not on Roof:	None		
Distance From Trees:	None		
Distance to Furnace or Incinerator:	None		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	Yes		
Suitable comparison against annual PM2.5?:	N/A		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	Upon installation and removal		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

☐ Variable: Temperature

☐ Variable: Barometric Pressure

☐ Variable: Precipitation

☐ Variable: Wind Speed

☐ Variable: Wind Direction

☐ Variable: Relative Humidity



GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
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Site Name: **Shell Cut TEOM**

Site Number:	1012	TEOM Installed?:	Yes	UTM X:	419478
County:	Inyo	TEOM Type:	TEOM	UTM Y:	4024950
FIPS Code:	06-027	Met Installed?:	Yes		
AIRS Number:	0025	Site Operator:	Steve Mobley		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	South-east shore, Owens Lake		
Address:	SHELL CUT - HIGHWAY 190 - MIDWAY BETWEEN DIRTY SOX AND FLAT ROCK, Owens Lake, CA		
Distance to Road:	164.5 meters to Hwy 190		
Traffic Count:	TBD		
Groundcover:	Dirt, sand, gravel, shrubs		
Representative Area:	South-east shore Owens Lake		
Pollutant:	PM-10		
Monitor Objective:	Representative Concentration		
Spatial Scale:	Neighborhood Scale	Start Date:	12/13/2000
Sampling Method:	PM-10 Impactor	Operation Schedule:	hourly
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	4.2 meters		
Distance to Supporting Structure:	0		
Distance from Obstructions on Roof:	0		
Distance from Obstructions Not on Roof:	2.6 meters (Met); 4.2 (powerline)		
Distance From Trees:	No trees		
Distance to Furnace or Incinerator:	0		
Distance Between Collocated Monitors:	0		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	No		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	Bi-weekly		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables: ☒ Variable: Temperature
☐ Variable: Barometric Pressure
☒ Variable: Precipitation

☒ Variable: Wind Speed
☒ Variable: Wind Direction
☐ Variable: Relative Humidity



Site Name: **Shell Cut TEOM**

Site Photo:



North-facing photo:



East-facing photo:



West-facing photo:



South-facing photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
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Site Name: **Simis**

Site Number:	782	TEOM Installed?:	No	UTM X:	324798
County:	Mono	TEOM Type:	N/A	UTM Y:	4217850
FIPS Code:	06-051	Met Installed?:	Yes		
AIRS Number:	0007	Site Operator:	Guy Davis		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	1.8 km north of Mono Lake		
Address:	SIMIS RES-HIWAY 167, MONO LAKE, CA		
Distance to Road:	475 meters to CA 167		
Traffic Count:	TBD		
Groundcover:	Sagebrush/Rabbitbrush Scrub		
Representative Area:	High Desert		
Pollutant:	N/A		
Monitor Objective:	Local Meteorology		
Spatial Scale:	Neighborhood	Start Date:	5/21/1982
Sampling Method:	N/A	Operation Schedule:	hourly
Analysis Method:	N/A	Sampling Season:	Year-round
Probe Height:	10 meters AGL		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	N/A		
Distance from Obstructions Not on Roof:	N/A		
Distance From Trees:	38 meters		
Distance to Furnace or Incinerator:	N/A		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	N/A		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	N/A		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

- ☒ Variable: Temperature
☐ Variable: Barometric Pressure
☐ Variable: Precipitation

- ☒ Variable: Wind Speed
☒ Variable: Wind Direction
☐ Variable: Relative Humidity



Site Name: **Simis**

Site Photo:



North-facing photo:



East-facing photo:



West-facing photo:



South-facing photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
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Site Name: **Stanley TEOM**

Site Number:	1014	TEOM Installed?:	Yes	UTM X:	409315
County:	Inyo	TEOM Type:	TEOM	UTM Y:	4024570
FIPS Code:	06-027	Met Installed?:	Yes		
AIRS Number:	0026	Site Operator:	Scott Weaver		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	Ash Point; West side Owens Lake, CA		
Address:	BILL STANLEY SITE - OWENS LAKE, CA		
Distance to Road:	85 meters		
Traffic Count:	TBD		
Groundcover:	sand and shrubs		
Representative Area:	Southwestern shoreline of Owens Lake		
Pollutant:	PM-10		
Monitor Objective:	Representative Concentration		
Spatial Scale:	Neighborhood Scale	Start Date:	3/4/2002
Sampling Method:	PM-10 Impactor	Operation Schedule:	hourly
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	19.8 meters above roof; 4.4 m AGL		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	2.1 m to tower (attached to shelter)		
Distance from Obstructions Not on Roof:	7.6 meters to power pole		
Distance From Trees:	N/A - no trees		
Distance to Furnace or Incinerator:	N/A		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	No		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	Bi-weekly		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

- ☒ Variable: Temperature
☐ Variable: Barometric Pressure
☒ Variable: Precipitation

- ☒ Variable: Wind Speed
☒ Variable: Wind Direction
☐ Variable: Relative Humidity



Site Name: **Stanley TEOM**

Site Photo:



North-facing photo:



East-facing photo:



West-facing photo:



South-facing photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
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Site Name: **T-23 TEOM**

Site Number:	1044	TEOM Installed?:	Yes	UTM X:	420143
County:	Inyo	TEOM Type:	TEOM	UTM Y:	4035210
FIPS Code:	06-027	Met Installed?:	No		
AIRS Number:		Site Operator:	Steve Mobley		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	Eastern Owens Lake Shallow Flood Area		
Address:	Owens Lake, CA		
Distance to Road:	2.4 meters to berm		
Traffic Count:	N/A		
Groundcover:	Dirt, gravel, water		
Representative Area:			
Pollutant:	PM-10		
Monitor Objective:	High concentration, special purpose monitor		
Spatial Scale:	Neighborhood Scale	Start Date:	3/8/2010
Sampling Method:	PM-10 Impactor	Operation Schedule:	hourly
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	4.1 meters		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	None		
Distance from Obstructions Not on Roof:	None		
Distance From Trees:	None		
Distance to Furnace or Incinerator:	None		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	N/A		
Frequency of flow rate verification for manual PM sampler audit:			
Frequency of flow rate verification for automated PM analyzers audit:	Bi-weekly		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

☐ Variable: Temperature

☐ Variable: Barometric Pressure

☐ Variable: Precipitation

☐ Variable: Wind Speed

☐ Variable: Wind Direction

☐ Variable: Relative Humidity



GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
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Site Name: **T-23 TEOM**

Site Photo:



North-
facing
photo:



East-facing
photo:



West-
facing
photo:



South-
facing
photo:





GBUAPCD Site Report

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Site Name: **T-25 TEOM - Shut down Mar 2010**

Site Number:	1041	TEOM Installed?:	Yes	UTM X:	420186
County:	Inyo	TEOM Type:	TEOM	UTM Y:	4036040
FIPS Code:	06-027	Met Installed?:	No		
AIRS Number:		Site Operator:	Steve Mobley		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	East-central Owens Lake		
Address:	Owens Lake, CA		
Distance to Road:	2.4 meters to berm		
Traffic Count:	TBD		
Groundcover:	Dirt, gravel, water		
Representative Area:	Central Owens Lake special purpose monitor		
Pollutant:	PM-10		
Monitor Objective:	High concentration		
Spatial Scale:	Neighborhood scale	Start Date:	4/1/2008
Sampling Method:	PM-10 Impactor	Operation Schedule:	hourly
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	4.1 meters		
Distance to Supporting Structure:	0		
Distance from Obstructions on Roof:	0		
Distance from Obstructions Not on Roof:	26.0 meters (Met/DWP)		
Distance From Trees:	0		
Distance to Furnace or Incinerator:	0		
Distance Between Collocated Monitors:	0		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	N/A		
Suitable comparison against annual PM2.5?:	N/A		
Frequency of flow rate verification for manual PM sampler audit:			
Frequency of flow rate verification for automated PM analyzers audit:	Bi-weekly		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

☐ Variable: Temperature

☐ Variable: Barometric Pressure

☐ Variable: Precipitation

☐ Variable: Wind Speed

☐ Variable: Wind Direction

☐ Variable: Relative Humidity



Site Name: **T-25 TEOM - Shut down Mar 2010**

Site Photo:



North-facing photo:



East-facing photo:



West-facing photo:



South-facing photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
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Site Name: **T-4 TEOM**

Site Number:	1043	TEOM Installed?:	Yes	UTM X:	413927
County:	Inyo	TEOM Type:	TEOM	UTM Y:	4022240
FIPS Code:	06-027	Met Installed?:	No		
AIRS Number:		Site Operator:	Steve Mobley		
Current:	Yes	Collecting Agency:	GBUAPCD		

Location:	On-lake monitor, southern portion Owens Lake		
Address:	Owens Lake, CA		
Distance to Road:	4.7 meters		
Traffic Count:	TBD		
Groundcover:	Veg, sand, large gravel, water		
Representative Area:	Southern Owens Lke		
Pollutant:	PM-10		
Monitor Objective:	High concentration, special purpose monitor		
Spatial Scale:	Neighborhood scale	Start Date:	2/25/2010
Sampling Method:	PM-10 Impactor	Operation Schedule:	hourly
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	4.7 meters		
Distance to Supporting Structure:	0		
Distance from Obstructions on Roof:	0		
Distance from Obstructions Not on Roof:	0		
Distance From Trees:	No trees		
Distance to Furnace or Incinerator:	N/A		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	No		
Suitable comparison against annual PM2.5?:	No		
Frequency of flow rate verification for manual PM sampler audit:			
Frequency of flow rate verification for automated PM analyzers audit:	Bi-weekly		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

☐ Variable: Temperature

☐ Variable: Barometric Pressure

☐ Variable: Precipitation

☐ Variable: Wind Speed

☐ Variable: Wind Direction

☐ Variable: Relative Humidity



GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
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Site Name: **T-4 TEOM**

Site Photo:



North-facing photo:



East-facing photo:



West-facing photo:



South-facing photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, CA 93514
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Site Name: **T-8 TEOM - Shut down Feb 2010**

Site Number:	1040	TEOM Installed?:	Yes	UTM X:	414928
County:	Inyo	TEOM Type:	TEOM	UTM Y:	4024930
FIPS Code:	06-027	Met Installed?:	No		
AIRS Number:		Site Operator:	Steve Mobley		
Current:	No	Collecting Agency:	GBUAPCD		

Location:	South-central Owens Lake		
Address:	Owens Lake, CA		
Distance to Road:	19.2 meters (berm)		
Traffic Count:	TBD		
Groundcover:	Veg, sand, large gravel		
Representative Area:	Southern Owens Lake special purpose monitor		
Pollutant:	PM-10		
Monitor Objective:	High Concentration		
Spatial Scale:	Neighborhood scale	Start Date:	4/24/2008
Sampling Method:	PM-10 Impactor	Operation Schedule:	hourly
Analysis Method:	Gravimetry	Sampling Season:	Year-round
Probe Height:	4.4. meters		
Distance to Supporting Structure:	0		
Distance from Obstructions on Roof:	0		
Distance from Obstructions Not on Roof:	0		
Distance From Trees:	No trees		
Distance to Furnace or Incinerator:	0		
Distance Between Collocated Monitors:	0		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	N/A		
Suitable comparison against annual PM2.5?:	N/A		
Frequency of flow rate verification for manual PM sampler audit:	N/A		
Frequency of flow rate verification for automated PM analyzers audit:	Bi-weekly		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables:

☐ Variable: Temperature

☐ Variable: Barometric Pressure

☐ Variable: Precipitation

☐ Variable: Wind Speed

☐ Variable: Wind Direction

☐ Variable: Relative Humidity



Site Name: **T-8 TEOM - Shut down Feb 2010**

Site Photo:



North-facing photo:



East-facing photo:



West-facing photo:



South-facing photo:





GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street
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Site Name: **WMRS-OVL FDMS**

Site Number:	695	TEOM Installed?:	Yes	UTM X:
County:	Inyo	TEOM Type:	FDMS TEOM	UTM Y:
FIPS Code:	06-027	Met Installed?:	Yes	
AIRS Number:	0002	Site Operator:	Valerie Thorp	
Current:	No	Collecting Agency:	GBUAPCD	

Location:			
Address:	3000 E. LINE ST., BISHOP, CA. 93514		
Distance to Road:	150 m		
Traffic Count:	TBD		
Groundcover:	Decomposed granite		
Representative Area:	Owens Valley		
Pollutant:	PM10		
Monitor Objective:	Background local		
Spatial Scale:	Regional	Start Date:	4/7/2006
Sampling Method:	PM-10 Impactor	Operation Schedule:	hourly
Analysis Method:	Gravimetry	Sampling Season:	h
Probe Height:	10m (met); 5m (inlet)		
Distance to Supporting Structure:	N/A		
Distance from Obstructions on Roof:	N/A		
Distance from Obstructions Not on Roof:	3 meters to met tower		
Distance From Trees:	N/A		
Distance to Furnace or Incinerator:	N/A		
Distance Between Collocated Monitors:	N/A		
Unrestricted Airflow:	360		
Probe Material:	N/A		
Residence Time:	N/A		
Will there be a change in 18 months?:	Yes		
Suitable comparison against annual PM2.5?:	No		
Frequency of flow rate verification for manual PM sampler audit:			
Frequency of flow rate verification for automated PM analyzers audit:	Bi-weekly		
Frequency of one-point QC check (gaseous):	N/A		

Meteorological Variables: ☒ Variable: Temperature
☒ Variable: Barometric Pressure
☐ Variable: Precipitation

☒ Variable: Wind Speed
☒ Variable: Wind Direction
☒ Variable: Relative Humidity



Site Name:

WMRS-OVL FDMS

Site Photo:



North-
facing
photo:



East-facing
photo:



West-
facing
photo:



South-
facing
photo:

